ORDER NO. EMID0304001C0
A5

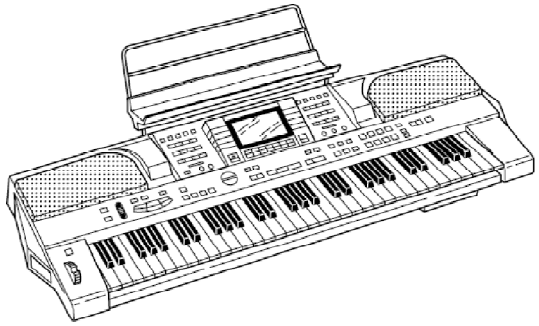
Service Manual

PCM KEYBOARD

SX-KN2400P / SX-KN2400PC / SX-KN2400EX / SX-KN2400EH / SX-KN2400EQ / SX-KN2400EG / SX-KN2400EB

SX-KN2400GN / SX-KN2400GM / SX-KN2400GH / SX-KN2400GT / SX-KN2400GU

Colour
(S) Silver Type



SPECIFICATIONS

SPECIFICATIONS

KEYBOARD	61 KEYS (WITH INITIAL TOUCH)
SOUND GENERATOR	PCM
MAX. POLYPHONY	64 NOTES
SOUNDS	NUMBER OF SOUNDS: 1024 SOUNDS (990 SOUNDS+ 2 ORGAN DRAWBARS+ 32 DRUM KITS)
	SOUND GROUP: PIANO, GUITAR, HARPSI, STRINGS& VOCAL,BRASS, MALLET& ORCHPERC, WORLD, ORGAN& ACCORDION,SAX& WOODWIND, SYNTH, BASS, DRUM KITS, DIGITAL DRAWBAR
	SOUND EXPLORER: Supported
EFFECT	SUSTAIN, DIGITAL EFFECT, MULTI EFFECT, REVERB, CHORUS
WHEEL	PITCH BEND
PART SELECT	RIGHT 1, RIGHT 2, LEFT
TRANSPOSE	+/-12 NOTES
RHYTHMS	NUMBER OF RHYTHMS: 170 RHYTHMS× 4 VARIATIONS
	RHYTHM GROUP: ROCK& POP, BALLAD, JAZZ& SWING, DANCE POP, SYMPLE BEET, DANCE CLUB, TRAD& WALTZ, BALLROOM& SHOW, LATIN& WORLD,USA
FAVORITES	Supported
CONTROLS	MAIN VOLUME, MIC VOLUME, BALANCE, MUTE, CONDUCTOR, START/STOP, INTRO& ENDING 1, INTRO& ENDING 2, FILL IN 1, FILL IN 2, COUNT INTRO, SYNCHRO& BREAK,TEMPO/PROGRAM, TAPTEMPO, FADEIN/OUT, SPLIT POINT
PERFORMANCE PADS	20 PRESET BANKS× 6 PADS WITH SOLO
	USER BANK× 3, COMPILE BANKS× 2, CONTROL PRESET× 1
	STOP, AUTO SETTING
AUTO PLAY CHORD	MODE: BASIC, ADVANCED 1, 2, PIANIST
	MEMORY, ON BASS, CHORD FINDER, LEFT HOLD
MUSIC STYLE ARRANGER	Supported
SOUND ARRANGER	Supported
MUSIC STYLIST	Supported
ONE TOUCH PLAY	Supported

TECHNI-CHORD	Supported
PANEL MEMORY	3 BANKS× 8, SET, NEXT BANK, BANK VIEW
SEQUENCER	16 TRACKS
	RESOLUTION: 1/96 PER BEAT
	STORAGE CAPACITY: APPROX.40000 NOTES (10 SONG MAX.)
	INPUT MODES: EASY RECORD, REALTIME RECORD, STEP RECORD
	FUNCTIONS: RECORD& EDIT, COPY& PASTE,RANGEEDIT
COMPOSER	8 PARTS: BASS, ACCOMP 1 - 5, DRUMS 1, 2
	STORAGE CAPACITY: APPROX. 13000 NOTES
	INPUT MODES: EASY COMPOSER, REALTIME RECORD, STEP RECORD
	FUNCTIONS: PATTERN COPY, SEQ TO COMPOSERCOPY, LOADSINGLE COMPOSER
	MEMORY: 3 BANKS
DISK DRIVE	3.5 inch DISK DRIVE for 2HD (1.44MB), 2DD (720KB)
	LOAD, SAVE, DIRECT PLAY, SONG MEDLEY, DISK TOOLS, PREFERENCES
SOUND SETTING	PART SETTING, MIXER, MASTER TUNING, KEY SCALING, TECHNI-CHORD, SOUND LOAD OPTION, APC REVERB SETTING, SOUND ARRANGER
SOUND EDIT	EASY EDIT, TONE, PITCH, FILTER, AMPLITUDE, LFO, EFFECT, CONTROLLER
	MEMORY: 40, 1 USER DRUM KIT
REVERB& EFFECT	MIC REVERB& EFFECT, SOUND LOAD OPTION, MIXER, MULTI, CHORUS, REVERB, TONE CONTROL
CONTROL	INITIAL, OVERALL TOUCH SENSITIVITY, FOOT CONTROLLERS, PANEL MEMORY MODE, MUSIC STYLE ARRANGER MODE, FADE IN/ OUT SETTING
CUSTOMIZE	HOME PAGE SETTING, DISPLAY TIME OUT, MIDI SETTING LOAD OPTION, DATA PROTECTION, LANGUAGE SETTING, DISK PREFERENCE(KN2400)/SD PREFERENCE(KN2600)

MIDI	PART SETTING, CONTROL MESSAGES, REALTIME MESSAGES, COMMON SETTING, INPUT/OUTPUT SETTING, MIDI PRESETS, MODE SETTING, COMPUTER CONNECTION
DISPLAY	LCD
	PAGE, CONTRAST, EXIT, DISPLAY HOLD
HELP	Supported
DEMO	Supported
TERMINALS	PHONES, FOOT SW, EXP PEDAL, LINE OUT (R/MONO,L), MIDI(IN, OUT), USB, MIC
OUTPUT	36 W (18 W× 2)
SPEAKERS	12 cm× 2, 6.5 cm× 2
POWER REQUIREMENT	75 W
	AC120/220/240V 50/60 Hz
	AC120V 60 Hz (NORTH AMERICA AND MEXICO)
	AC220-240V 50/60 Hz (EUROPE, AUSTRALIA AND NEW ZEALAND
DIMENSIONS (W×H×D)	105.7 cm× 16.2 cm× 40.4 cm (41-5/8" × 6-3/8" × 15-29/32")
NET WEIGHT	11.7 kg (25.8 lbs)
ACCESSORIES	AC CORD, MUSIC STAND, CD-ROM(AUDIO RECORDER, SONG MANAGER, USB DRIVER)

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Technics

1. Warning

To prevent the risk of fire, smoke, or electrical shock and to ensure safe operation, please be sure to follow the safety guidelines below.

1. **At places where special caution is required, the necessary safety precautions are clearly labeled or printed, for example, on the cabinet, or on the part concerned. Please follow these safety precautions, and also those listed in the Owner'sManual.**
2. **Parts which have a ⚠ ; mark in the circuit diagram or in the parts**

list are essential for safety. When replacing these parts, be sure to use onlythe specified parts.

3. Use the specified types for internal wiring (double-insulated wiring, etc.).
4. When replacing parts on the AC primary side (power transformer, electric switch, electrical cord, noise-prevention condenser, etc.), wind the lead wire and secure it by soldering.
5. Do not let the wiring come into contact with heat-emitting devices (fuse resistor, radiator plate, etc.).
6. When replacing the wiring, make sure that it is not in contact with the unfinished or rough edge of a part.
7. When replacing the power cord (except for the plug-in type), tug it from various directions to confirm that it does not slip out of place.
8. Spacing
   If soldering was done on the AC primary circuit, confirm that the interval between the soldered terminals or between the terminal and surrounding metallic parts is at least the minimum required (between the primary circuit and the chassis: atleast6.5mm; between primary circuit terminals: at least 4.0 mm; between primary circuit terminals and secondary circuit terminals: at least 6.5 mm.).

2. Safety Precaution

2.1. Safety Precaution

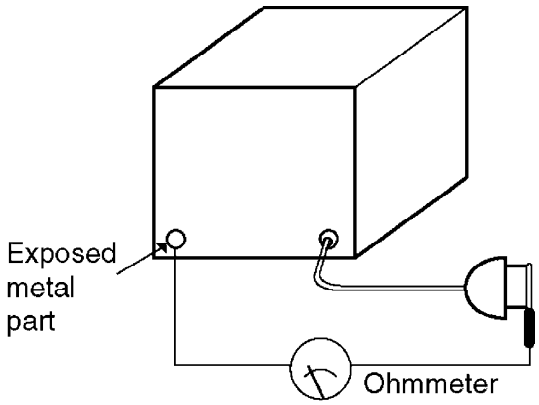
1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only the manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure

to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

2.2. Insulation Resistance Test

1. **Unplug the power cord and short the prongs of the plug with a jumper wire.**
2. **Turn on the power switch.**
3. **Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screw heads, connectors, control shafts, handle brackets, etc. Measurements should range from 4 MOhm to infinity for allexposedparts.(refer to Fig.1)**

Fig.1



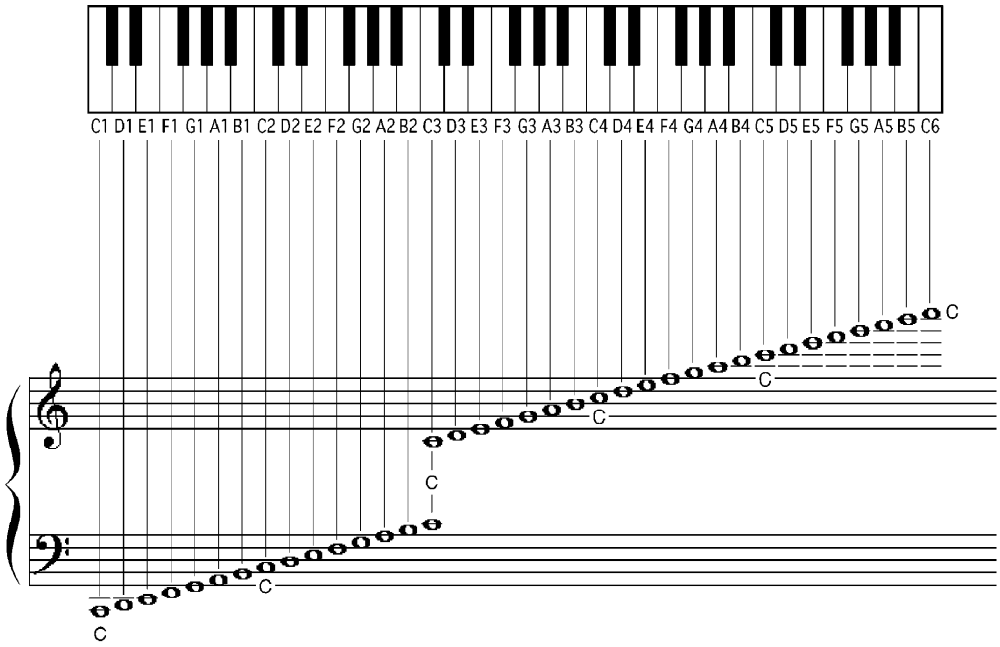
Resistance = 4MΩ to ∞

3. OWNERS MANUAL

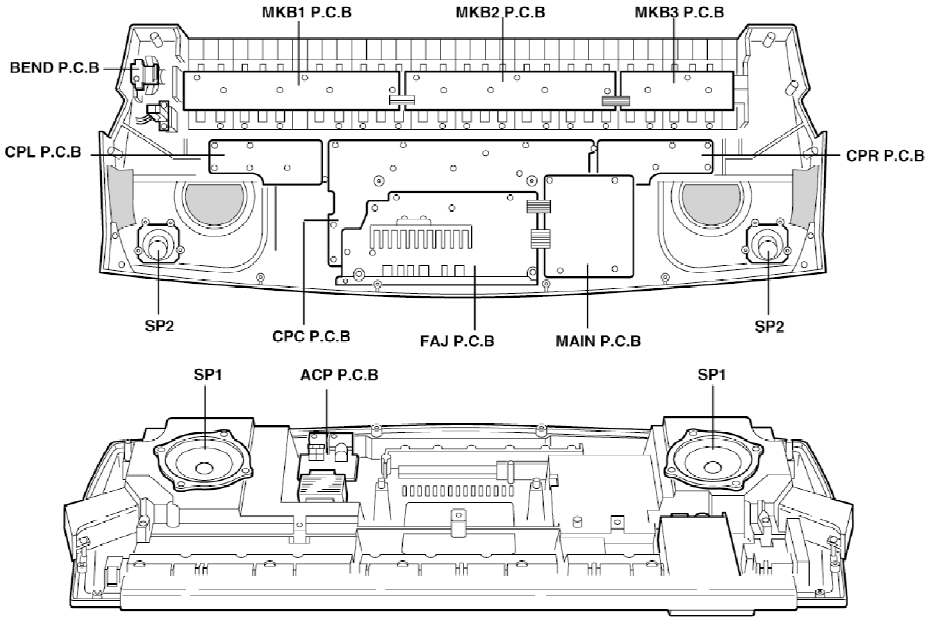
4. MIDI Implementation Chart

5. Keyboard Ranges

This keyboard features Touch Response, by which you control the volume by playing the keys harder or softer.



6. Parts Location



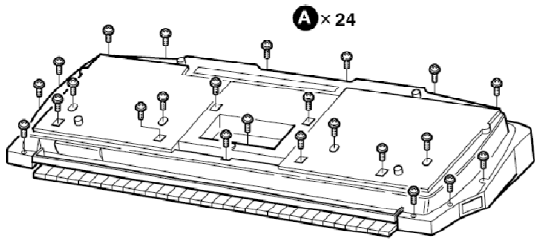
7. Disassembly Instructions

7.1. Opening the cabinet

1. Turn the keyboard cabinet upside down, and remove the bottom screws (Ⓐ24 pcs.) as shown in Fig.2 .

2. Place the keyboard bottomside down, and open the cabinet .

Fig.2



7.2. Removing the MAIN and FAJ P.C.B.s

- Open the cabinet (see step " Opening the cabinet ").

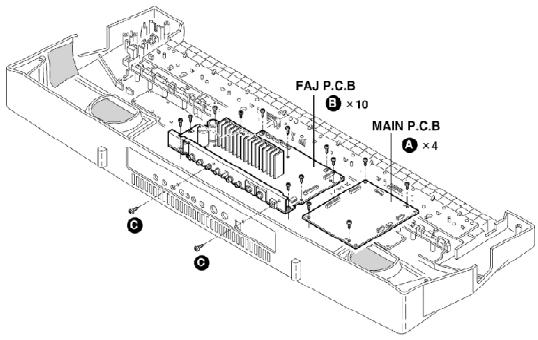
MAIN P.C.B.

1. Remove the MAIN P.C.B. mounting screws (Ⓐ 4pcs.) as shown in Fig.3 .

FAJ P.C.B.

1. Remove the FAJ P.C.B. mounting screws (Ⓑ 10pcs.and Ⓒ2 pcs.) as shown in Fig.3.

Fig.3



7.3. Removing the BEND P.C.B. and 6.5cm speakers

BEND P.C.B.

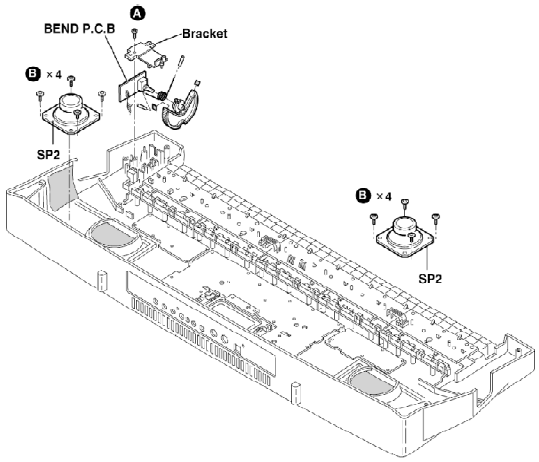
1. Remove the bracket mounting screws (Ⓐ) as shown in Fig.4 .

2. Remove the BEND P.C.B. as shown in Fig.4 .

6.5cm speaker

1. Remove the 6.5cm speaker mounting screws (Ⓑ 8pcs.) as shown in Fig.4.

Fig.4



7.4. Removing the CPC, CPL and CPR P.C.B.s and LCD

- Remove the MAIN and FAJ P.C.B.S (see step " Removing the MAIN and FAJ P.C.B.s ").
- Remove the shield cover mounting screws(Ⓐ 5pcs.) and remove the shield cover as shown in Fig.5 .

CPC P.C.B.

1. Remove the CPC P.C.B. mounting screws (Ⓒ 19pcs.) as shown in Fig.5 .

CPL P.C.B.

1. Pull off the MAIN VOLUME knob as shown in Fig.5 .
2. Remove the CPL P.C.B. mounting screws (Ⓑ 5 pcs.) as shown in Fig.5 .

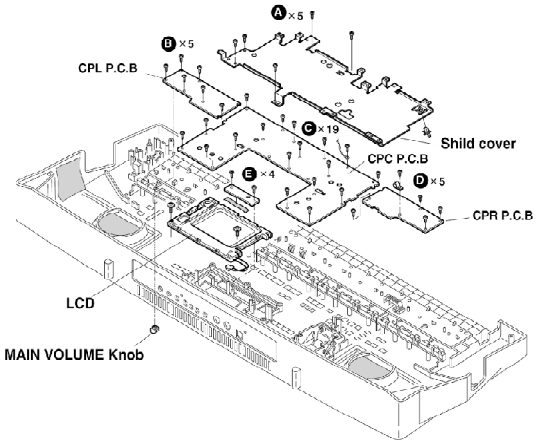
CPR P.C.B.

- Remove the CPR P.C.B. mounting screws (Ⓓ 5 pcs.) as shown in Fig.5 .

LCD

1. Remove the CPC P.C.B. .
2. Remove the LCD mounting screws (Ⓔ 4pcs.) as shown in Fig.5 .

Fig.5



7.5. Removing the MKB1, MKB2 and MKB3 P.C.B.s

- Open the cabinet (see step " Opening the cabinet ").

MKB1 P.C.B.

- Remove the MKB1 P.C.B. mounting screws (Ⓐ 6pcs.) as shown in Fig.6 .

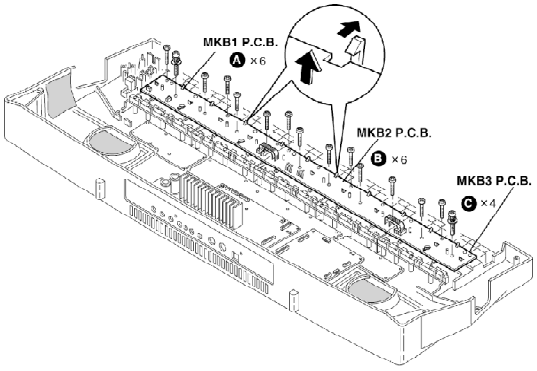
MKB2 P.C.B.

- Remove the MKB2 P.C.B. mounting screws (Ⓑ 6 pcs.) as shown in Fig.6 .

MKB3 P.C.B.

- Remove the MKB3 P.C.B. mounting screws (Ⓒ 4 pcs.) as shown in Fig.6 .

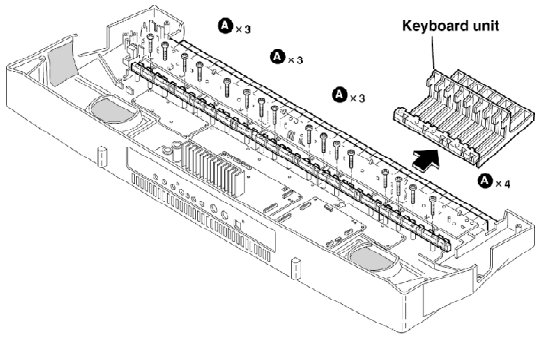
Fig.6



7.6. Removing the Keybord Unit

1. Open the cabinet (see step " Opening the cabinet ").
2. The keyboard consists of 5 units. These units can be removed indeoendently by removing the mounting screws (Ⓐ 3 or 4 pcs. for each unit) as shown in Fig.7 .

Fig.7



7.7. Removing the Disk Drive Unit, the power transformer, the ACP P.C.B. and the 12cm SP

- Open the cabinet (see step " Opening the cabinet ").

ACP P.C.B.

1. Remove the ACP cover mounting screws (Ⓐ 2pcs.) as shown in Fig.8 .
2. Remove the ACP P.C.B.and insuration sheet mounting screw (Ⓑ 2pcs.) as shown in Fig.8 .

Power transformer

- Remove the power transformer mouting screws (Ⓒ 4pcs.) as shown in Fig.8 .

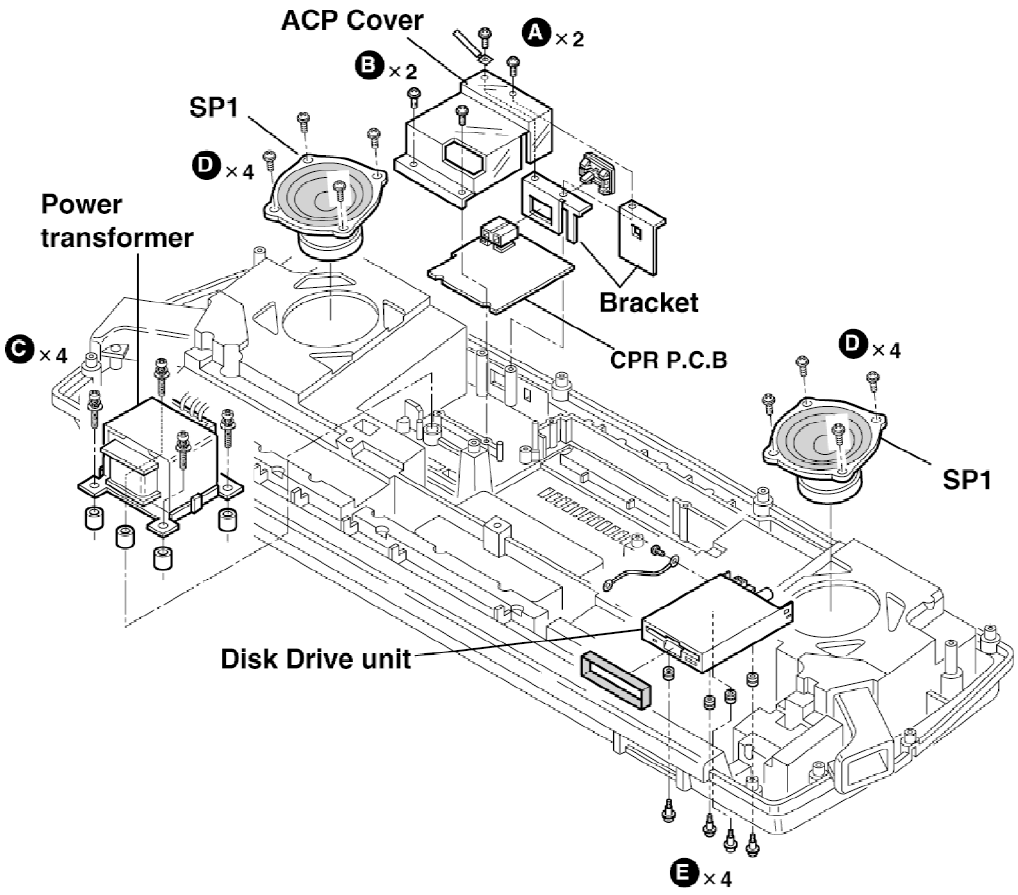
12 cm SP

- Remove the 12 cm SP holding screws (Ⓓ 8pcs.) as shown in Fig.8 .

Disk Drive unit

- Remove the Disk Drive unit mounting screws (Ⓔ 4 pcs.) as shown in Fig.8 .

Fig.8



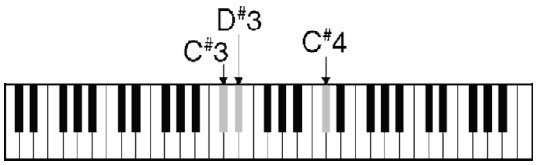
8. Service Diagnostic Function

The service diagnostic function makes it possible to determine whether the various test modes pass or fail. The test modes are completely independent of one another. Select a test mode as necessary, and run the test.

To set to the service diagnostic mode:

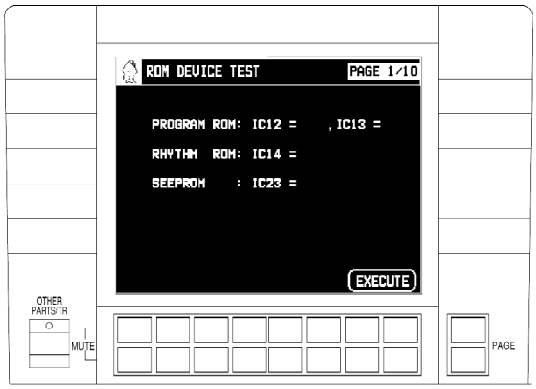
1. **Press and hold the C#3, D#3, C#4 keys, and then turn on the power switch. (refer to Fig.9)**

Fig.9



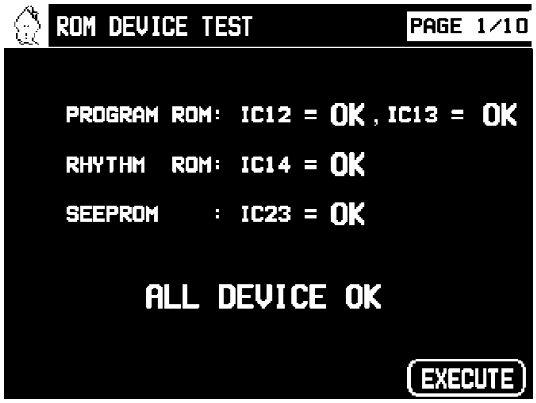
2. **After the service diagnostic screen is displayed on the LCD, release the three keys. (refer to Fig.10)**
3. **Use the page buttons to select the respective test.**

Fig.10



8.1. ROM device test

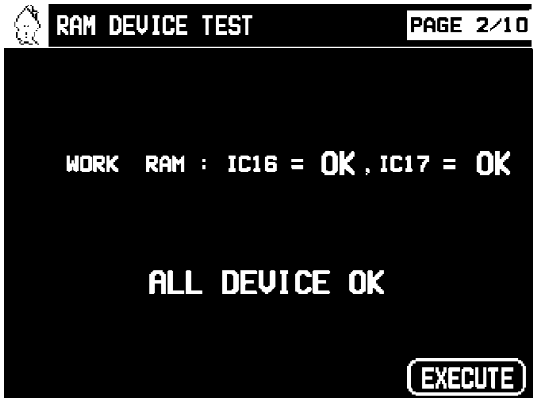
Fig.11



- Press the EXECUTE button to begin the test.
- The test result (OK or NG) is displayed within twenty seconds. If the test result is NG, not only the respective IC, but also a break or short circuit in the ADDRESS/DATA BUS as well as in any of the strobe signal lines may be the causeof thefailure.(refer to Fig.11)

8.2. RAM device test

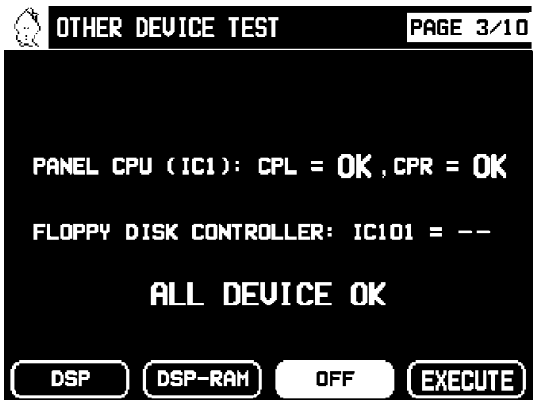
Fig.12



- Press the EXECUTE button to begin the test.
- The test result (OK or NG) is displayed within a few seconds. If the test result is NG, not only the respective IC, but a break or short circuit in the ADDRESS/DATA BUS as well as in any of the strobe signal lines may be the causeofthefailure. (refer to Fig.12)

8.3. Other device test

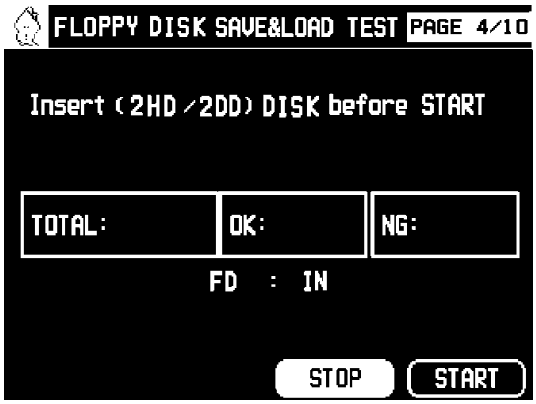
Fig.13



- Press the EXECUTE button to begin the test.
- The test result (OK or NG) is displayed with in a few seconds. If the test result is NG, not only the respective IC, but also a break or short circuit in the ADDRESS/DATA BUS as well as in any of the strobe signal lines may be thecauseof thefailure. (refer to Fig.13)

8.4. Floppy Disk SAVE/LOAD test

Fig.14



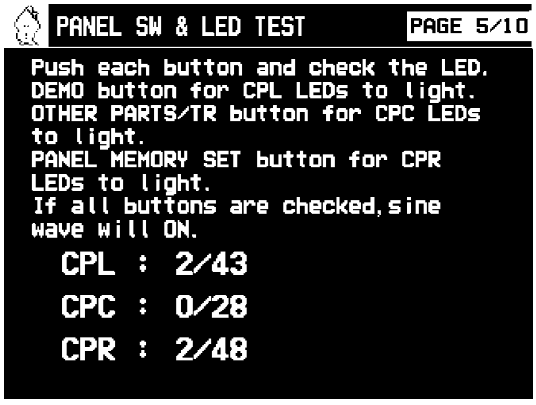
- Insert a formatted floppy disk into the Disk Drive. Press the START button to begin the test.
- The test is carried out repeatedly. Data is saved and loaded, and then the two data sets are compared. The number of times that the test results in OK or NG are counted and displayed on the LCD. To

interrupt the test, press the STOP button.(referto Fig.14)

- Even when the Floppy Disk Drive is functioning properly, the test can result in NG. If this happens frequently, clean the magnetic heads of the Floppy Disk Drive with a cleaning disk. Then, change the disk used in testing with another disk andreperformthetest. If the trouble is not solved, it is likely that the Disk Drive unit or some other part of the hardware is broken.

8.5. Panel SW& LED test

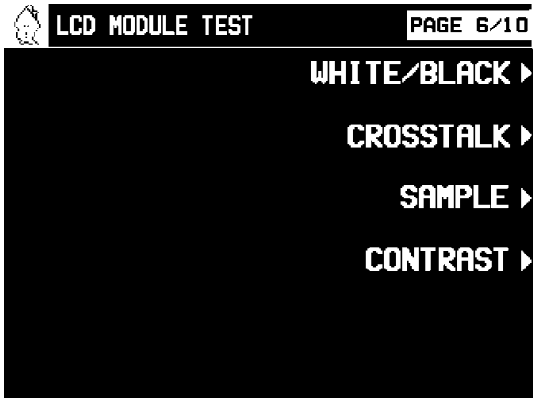
Fig.15


PANEL SW & LED TEST
PAGE 5/10
Push each button and check the LED.
DEMO button for CPL LEDs to light.
OTHER PARTS/TR button for CPC LEDs to light.
PANEL MEMORY SET button for CPR LEDs to light.
If all buttons are checked, sine wave will ON.
CPL : 2/43
CPC : 0/28
CPR : 2/48

- Press all the buttons on the Control Panel and confirm that the corresponding LED lights.
- If an LED fails to light, the cause may be a defective switch or a break in the surrounding circuit, etc.
- After all the buttons have been pressed, all the PANEL MEMORY LEDs light. If all switches are OK, “ALL DEVICE OK” is shown on the LCD. (If a switch is defective, nothing is shown.) (refer to Fig.15)
- To light all the LEDs, press and hold the DEMO button. If an LED fails to light, the LED may be defective or there may be a break in the surrounding circuit.

8.6. LCD module test (LCD adjustment and confirmation)

Fig.16



- Press the WHITE/BLACK, CROSSTALK, SAMPLE or CONTRAST button to begin the respective test. (refer to Fig.16)

WHITE/BLACK:

All the dots light in white and finally black. The display can be held by pressing the DISPLAY HOLD button.

CROSSTALK:

An H pattern is shown. LCD crosstalk can be evaluated. To exit this test, press the EXIT button.

SAMPLE:

Several display patterns shown during normal use are shown. The display can be held by pressing the DISPLAY HOLD button.

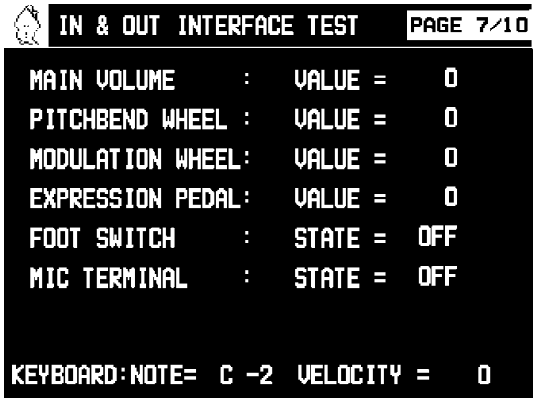
CONTRAST:

The test pattern is shown. Adjust the contrast by the CONTRAST control on the right of the LCD. To exit this test, press the EXIT button.

- If the correct display is not shown during these tests, the LCD or LCD drive circuit may be defective.

8.7. In& Out interface test

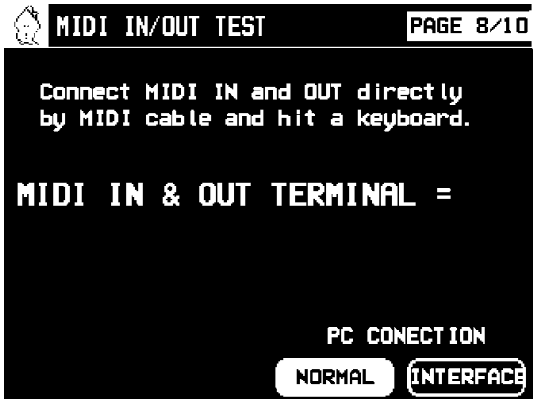
Fig.17


IN & OUT INTERFACE TEST
PAGE 7/10
MAIN VOLUME : VALUE = 0
PITCHBEND WHEEL : VALUE = 0
MODULATION WHEEL: VALUE = 0
EXPRESSION PEDAL: VALUE = 0
FOOT SWITCH : STATE = OFF
MIC TERMINAL : STATE = OFF
KEYBOARD:NOTE= C -2 VELOCITY = 0

- The operation status of each input action part can be confirmed. If the part is operating properly, “OK” is shown, excluding the Expression Pedal. (refer to Fig.17)
- When a keyboard key is pressed, the corresponding pitch and velocity aftertouch is displayed (only as long as the key is depressed).
- The respective statuses for other input action parts are displayed. (Analog parts are shown as numerical values from 0 to 255, and switches are shown as ON or OFF.)
- If the display fails to change when the part is operated, or if the change is abnormal, it may indicate a defective part.

8.8. MIDI IN/OUT test

Fig.18



- First, set the COMPUTER terminal switch to MIDI.
- Use a MIDI cable to directly connect the MIDI IN and MIDI OUT terminals.
- When a keyboard key is pressed, the transmitted and received data are compared and the MIDI terminal operation is indicated as being OK or NG. (refer to Fig.18)
- If NG is shown, check both the IN and OUT terminals, as well as the

circuit.

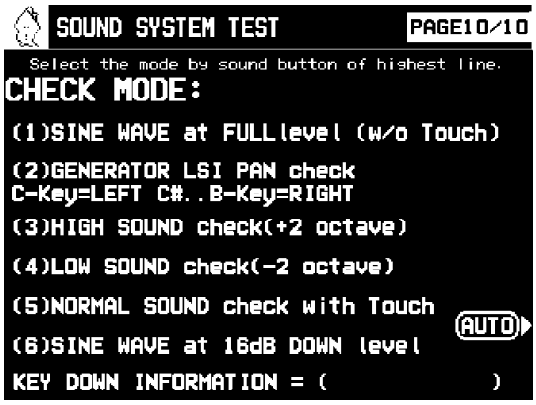
8.9. WAVE ROM test

Fig.19

- Press the EXECUTE button to start the test.
- The test result (OK or NG) is displayed within thirty seconds. If the test result is NG, not only the respective IC, but also a break or short circuit in the ADDRESS/DATA BUS as well as in any of the strobe signal lines may be the causeofthefailure. (refer to Fig.19)

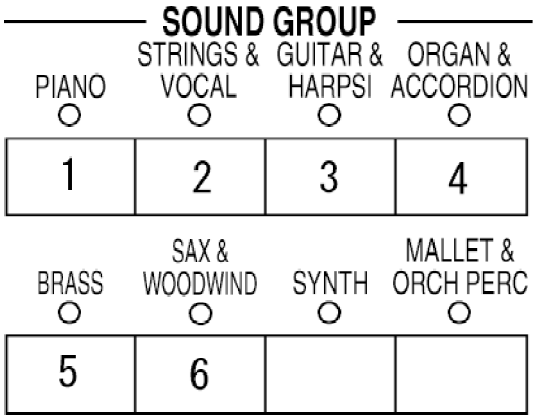
8.10. SOUND SYSTEM test

Fig.20


SOUND SYSTEM TEST
PAGE10/10
Select the mode by sound button of highest line.
CHECK MODE:
(1)SINE WAVE at FULLlevel (w/o Touch)
(2)GENERATOR LSI PAN check
C-Key=LEFT C#..B-Key=RIGHT
(3)HIGH SOUND check(+2 octave)
(4)LOW SOUND check(-2 octave)
(5)NORMAL SOUND check with Touch
(6)SINE WAVE at 16dB DOWN level
AUTO
KEY DOWN INFORMATION = ( )

- Use the button in the SOUND GROUP to select an item from 1 to 6 (refer to Fig.20 and Fig.21). Press a keyboard key.

Fig.21



1. **Generate a full amplitude sine wave in the pitch of each key. (No touch, fixed stereo center).**
   If no sound is generated or if the sound is distorted, the sound generator ROM corresponding to the key position is defective.
2. **For confirming the output pathway from the sound generator. (Fixed scale, no touch)**
   The Lch and Rch sound outputs are confirmed separately.
3. **Generate a full amplitude sine wave in the pitch of each key +2 octaves. (No touch, fixed stereo center)**
   By generating a sound frequency outside the normal keyboard zone, you can confirm whether or not there is an abnormality in the sound output frequency zone.
4. **Generates a full amplitude sine wave in the pitch of each key -2 octaves. (No touch, fixed stereo center)**
   By generating a sound frequency outside the normal keyboard zone, you can confirm whether or not there is an abnormality in the sound output frequency zone.
5. **Generate a sine wave in the pitch of each key with touch.**
   You can confirm if the volume changes depending on the touch.
6. **Generate a full amplitude sine wave in the pitch of each key at a -16 dB volume. (No touch, fixed stereo center)**
   You can confirm the same sound output as in 1, at a lower volume.

9. Precautions before Servicing

9.1. Precautions for measuring of the output waveforms

1. **The waveform was measured with a “National Digital Storage**

Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may differ somewhat due to the difference in the timing of triggering.

2. Since the 1/10 test probe is used, the indicated voltage value on the bottom part of each waveform illustration is 1/10 of the actual value (e.g. 0.2 V/cm should be 2.0 V/cm).
3. To measure the waveforms, first set this unit to the service diagnostic mode (refer to " WAVE ROM test "). The WAVE ROM output will then be output as a sine wave to facilitate theservicingcheck.

9.2. Important safety notice

- Components identified by a ⚠ mark have special characteristics impotant for safety.
- When replacing any of these components, use only manufacture's specified parts.

9.3. Symbolic Marks

The symbolic marks for resistors and capacitors which used in this circuits are classified as following Table-1 and Table-2 .

9.3.1. RESISTORS

- Resistors without symbolic mark are FIXED CARBON FILM RESISTORS (ERD-type).
- All resistors are 1/4 WATT, ±5 % TOLERANCE unless otherwise designated in schematic diagrams.

Table-1

SYMBOL	SPECIFICATION
(F)	Fixed Carbon Film Resistors “FLAME-PROOF” (ERD—F—type)
(F)	Fixed Wire Wound Resistors “FLAME-PROOF” (ERF—type)
(F)	Fixed Metal Oxide Film Resistors “FLAME-PROOF” (ERG—type)
(F)	Fixed Metal Film Resistors “FLAME-PROOF” (ERX—type)
(G)	Fixed Metal Film Resistors (Precision and High Stability) (ERO—type)
F	Fuse Type Fixed Metal Oxide Film Resistors “FLAME-PROOF” (ERQ—type)
F	Fuse Type Fixed Carbon Film Resistors “FLAME-PROOF” (ERD2FC—type)

9.3.2. CAPACITORS

- Capacitors without symbolic mark are POLYESTER CAPACITORS. (ECQM-type, ECQG-type, ±10% Tolerance)

- Polarized capacitors without symbolic mark are Aluminum Electrolytic Capapcitors. (ECEA-type, ±20% Tolerance)

Table-2

SYMBOL	SPECIFICATION	TYPE
(N)	Non-Polarized Electrolytic Capacitors	ECEA_KN_type
(Y)	Non-Polarized Electrolytic (for Network system)	ECEA_Y_type
(T)	Tantalum Solid Electrolytic Capacitors	ECS_type
(TF)	Metalized Plastic Film Capacitors (TF Series)	ECQV_type
◯	Temperature Compensating Ceramic Capacitors	ECC_type
	High-Dielecytric Constant Ceramic Capacitors	ECK_type ECR_type
	Axial Lead Ceramic Capacitors	ECB_type
	Metalized Polyester Film Capacitors for Across the Line	ECQ_EW_type
	Aluminum Electrolytic Capacitors for Smoothing Circuit	ECES_type

SYMBOL	SPECIFICATION	TYPE
	Multilayer Ceramic Chip Capacitors	ECUV_type

10. MEASURING CONDITION

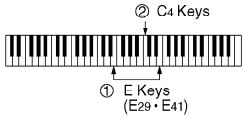
■Printed Circuit Board and Schematic Diagram

■ Measuring Condition of MAIN P.C.B.

Check Point ❷ - ❺

Set to the self-diagnostic mode followings.

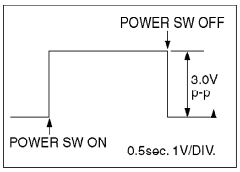
- While pressing two E keys (①) simultaneously, turn on the power switch.
- SOUND ..... BRASS
- Main Volume ..... MAX
- Keyboard ..... C4 (②)



Check Point ❶

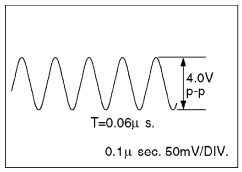
Set the initial setting mode (Refer to "OWNERS MANUAL".)

❶ RESET

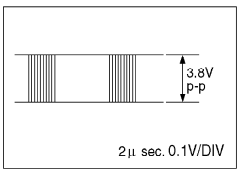


• Power SW ..... ON → OFF

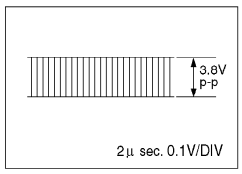
❷ TG CLOCK



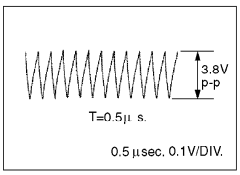
❸



❹



❺

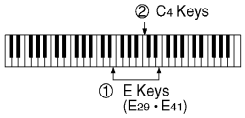


■ **Measuring Condition of FAJ P.C.B.**

Check Point ❸ - ❻

Set to the self-diagnostic mode followings.

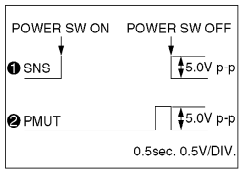
- While pressing two E keys (①) simultaneously, turn on the power switch.
- SOUND ..... BRASS
- Main Volume ..... MAX
- Keyboard ..... C_4 (②)



Check Point ❶, ❷

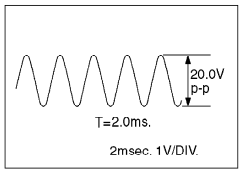
Set the initial setting mode (Refer to "OWNERS MANUAL")

❶ SNS, ❷ PMUT

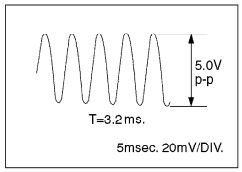


• Power SW..... ON → OFF

❸ HPL, ❹ HPR



❺ SPL, ❻ SPR



11. SCHEMATIC DIAGRAM

12. Printed Circuit Board

13. Block Diagram

14. Wiring Connection Diagram

15. Replacement Parts List

Notes:

***Important safety notice: / Components identified by ⚠ mark have special characteristics important for safety. / Funrthermore, special parts which have purposes of fire-retardant**

(resistors), high-quality sound (capacitors),low-noise(resistors),etc. are used. / When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list. / * Warning: This product uses a laser diode. Refer to caution statements.
***ACHTUNG:Die lasereinheit nicht zerlegen.Die lasereinheit darf nur gegen einc vom hersteller spezifizierte einheit ausgetauscht werden.**
***Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F= Farads (F) / *Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M= 1,000K (OHM)**
***The marking [RTL] indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.**
***Since SW consists of buttons and P.C.B.'s, we do not supply it as an individual part (refer to " Control Panel Parts Location ".).**
***<SPC> in Remarks columns parts that are supplied by SPC..**
***Other parts that are supplied by ASPC..**

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	QYAG3012AA	ASSEMBLED MUSIC RACK	1	
1-1	QMRG7112AB	MUSIC SHEET HOLDER	1	
2	QKWG032AD	LCD WINDOW	1	
3	QYPG1128BA	CONTROL PANEL UNIT	1	P
3	QYPG1128BB	CONTROL PANEL UNIT	1	EXCEPT P
4	QMFG4110AAK	HIMELON	4	
5	QMWG9020ACK	KEY ASSEMBLY 12 KEY	4	
5-1	QMWG1030ABK	WHITE KEY (CEGB)	1	
5-2	QMWG1031ABK	WHITE KEY (DFA)	1	
5-3	QMWG2004AAK	BLACK KEY (5 KEY)	1	
6	QMWG9021ACK	KEY ASSEMBLY (13 KEYS)	1	
6-1	QMWG1030ABK	WHITE KEY (CEGB)	1	
6-2	QMWG1031BBK	WHITE KEY (DFACC)	1	
6-3	QMWG2004AAK	BLACK KEY (5 KEY)	1	
7	QMGG055AA	KEY GUIDE RUBBER	61	
8	QMFG1141AA	FELT STOPPER KEY	2	
9	QMWG6015BAK	RUBBER SW 12 KEY	4	
10	QMWG6014CAK	RUBBER SW 13 KEY	1	
11	QEXGRA01010Q	WIRE W/CON (LCD-MAIN)	7	
12	QYKG330BA	PREPARED BOTTOM CASE	1	P
12	QYKG330BB	PREPARED BOTTOM CASE	1	EXCEPT P
12-1	QMRG5188AAK	PEF SHEET	1	
12-2	QMRG7070AAK	RUBBER LEG	4	
12-3	QMFG4223AAK	HIMELON	2	
12-4	QMRG7078ACK	BASS PORT L	1	
12-5	QMRG7079ACK	BASS PORT R	1	
12-6	QMGG041AA	FLOATING RUBBER	4	
12-7	XTW3+10Q	SCREW	4	
13	QAUG033AA	FDD UNIT	1	
14	QEXGRA01055A	EARTH WIRE	1	
15	QMFG4207AA	HIMELON FOR FD	1	
16	XYN3+F6	SCREW	1	
17	QGMG0032AA	PUNCHING NET (L)	1	
18	QGMG0033AA	PUNCHING NET (R)	1	
19	K2AB2G000003	AC IN CASE	1	P,PC ⚠

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
19	K2AA2G000003	AC IN CASE	1	EXCEPT P,PC ⚠
20	QMRG2133BA	ACP COVER	1	
21	QGNGKN2400MB	NAME PLATE	1	P
21	QGNGKN2400CB	NAME PLATE	1	PC
21	QGNGKN2400EB	NAME PLATE	1	EX,EQ,EB,EG,EH,GH
21	QGNGKN2400AB	NAME PLATE	1	GN
21	QGNGKN2400SB	NAME PLATE	1	GU,GT,GM
22	QQLG260AA	FCC LABEL	1	P ONLY
23	XTW3+20Q	SCREW	19	
24	XTW3+10QFZ	SCREW	4	
25	QMRG2072BAK	GAP COVER (R)	1	
26	QMRG2072CAK	GAP COVER (L)	1	
27	QMRG5194AAK	COVER SHEET	2	
28	SBNG4051A	BENDER WHEEL	1	
29	QMFG4076AAK	HIMELON	2	
30	QMBG012CAK	BENDER SPRING	1	
31	QMNG0057AAK	BEND PCB HOLDER	1	
32	XTV3+10G-M	SCREW	10	
33	QMRG2092BA	POWER SW COVER	1	
34	XTW3+10Q	SCREW	37	
35	QHDG069AA	SCREW	8	
36	QMAG0227AA	LCD BLACKET	1	
37	QMRG5191AA	URETHANE SHEET	1	
38	QMRG1037AA	CLAMPER	2	
39	L5DZALK00002	LCD	1	
40	XTWS3+10Q	SCREW	2	
41	XYE3+FG12	SCREW	12	
42	SHRG9760B	SPACER	8	
43	QHDG052AA	SCREW	5	
44	QLZG013A	FLAT CORE	3	
45	QMRG5105AA	URETHNE SHEET	2	
46	SHGG5010A	TUBE	2	
47	QLZG019A	CORE A	2	
48	QLZG017A	CORE B	2	
49	XYN4+F25	SCREW	4	P
49	XYN4+F30	SCREW	4	EXCEPT P,PC
50	SBNG7070B	SLIDE VOLUME KNOB	1	
51	QGUG1040AA	POWER SW BUTTON	1	
52	XTW3+20QFZ	SCREW	24	
53	QMRG2049ABK	INSULATION SHEET	1	
56	QMFG4167AAK	BENDER HIMELON B	3	
57	QMRG5190BAK	URETHANE SHEET	2	
58	XTW3+14TFZ	SCREW	2	
59	XTW3+16JFZ	SCREW	2	
60	QGUG1435ACK	BUTTON A	5	
61	QGUG1438AD1K	BUTTON C-1	1	
62	QGUG1384ACK	BUTTON D	1	
63	QGUG1385ACK	BUTTON E	1	
64	QGUG1441BBK	BUTTON F	1	
65	QGUG1455AC1K	BUTTON K-3	1	
66	QGUG1456ACK	BUTTON L	3	
67	QGUG1456BC1K	BUTTON L-1	1	
68	QGUG1457ABK	BUTTON M	2	
69	QGUG1458ACK	BUTTON Q-1	5	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
70	QGPG0132CBK	LCD PANEL	1	
71	QGUG1438ADK	BUTTON C	5	
72	QGUG1436ADK	BUTTON B	1	
73	QGUG1442ACK	BUTTON G	1	
74	QGUG1453AB1K	BUTTON H	1	
75	QGUG1454ABK	BUTTON J	1	
76	QGUG1455ACK	BUTTON K-2	1	
77	QGUG1457ACK	BUTTON M-1	1	
78	QGUG1420ACK	BUTTON N-1	1	
79	QGUG1469ABK	BUTTON P	1	
80	QMFG4216ACK	BUTTON CUSHION A	1	P
80	QMFG4216ABK	BUTTON CUSHION A	1	EXCEPT P
81	QMFG4217ACK	BUTTON CUSHION B	1	P
81	QMFG4216ABK	BUTTON CUSHION B	1	EXCEPT P
82	QMFG4218ACK	BUTTON CUSHION C	1	P
82	QMFG4218ABK	BUTTON CUSHION C	1	EXCEPT P
83	QMFG4219ACK	BUTTON CUSHION D	1	P
83	QMFG4219ABK	BUTTON CUSHION D	1	EXCEPT P
84	QMFG4220ACK	BUTTON CUSHION E	1	P
84	QMFG4220ABK	BUTTON CUSHION E	1	EXCEPT P
85	QMFG4184ACK	BUTTON CUSHION F	1	P
85	QMFG4184ABK	BUTTON CUSHION F	1	EXCEPT P
86	QMRG5245BA	URETHANE FOAM	2	
87	XTB3+10JFZ	SCREW	12	
88	QMRG1020AA	BUSHING	4	EXCEPT P,PC
89	QHDG043AA	SCREW	4	
A1	QQFGKN2600AA	MANUAL KIT	1	P
A1	QQFGKN2600BA	MANUAL KIT	1	PC
A1	QQFGKN2600CA	MANUAL KIT	1	EX,GU,GH,GT,GM
A1	QQFGKN2600DA	MANUAL KIT	1	EQ
A1	QQFGKN2600EA	MANUAL KIT	1	EB
A1	QQFGKN2600FA	MANUAL KIT	1	EG
A1	QQFGKN2600HA	MANUAL KIT	1	EH
A1	QQFGKN2600LA	MANUAL KIT	1	GN
A1-1	QQTG0692B	O/I BOOK(WITHADDRESSLABEL(ENGLISH)	1	P
A1-1	QQTG0692A	O/I BOOK(ENGLISH)	1	PC,EX,EB,EG,GH,GN,GN,GU
A1-1	QQTG0693A	O/I BOOK(FRENCH)	1	PC,EG,EH
A1-1	QQTG0694A	O/I BOOK(GERMAN)	1	EG,EH,EQ
A1-1	QQTG0695A	O/I BOOK(DUCH)	1	EH
A1-2	QQCG0443A	REFERENCE GUIDE	1	
A1-3	QQTG0699A	INSTALL MANUAL	1	
A2	QFVG2048A	PACKAGED CD-ROM	1	
A3	K2CB2CB00006	AC CORD	1	P,PC ⚠
A3	QJAG027AB	AC CORD	1	EX,EG,EH,EQ,GU,GT,GM ⚠
A3	QJAG028AB	AC CORD	1	EB,GH ⚠
A3	RJA0035-2X	AC CORD	1	GN ⚠
A4	K2DA42E00001	ATTACHMENT	1	GU,GT ONLY ⚠
P1	QPGG0533AB	CARTON BOX	1	
P2	QPFG088AA	POLYBAG	1	
P3	SHG810B	AC CORD BAG	1	
P4	QPFG103AA	POLYBAG CD ROM	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
S1	QSPG1010AA	POWER SW	1	⚠
SP1	L0AA12A00010	12CM SP	2	
SP2	L0AA06A00012	6.5CM SP	2	
T1	QTPG1M056A	POWER TRANSFORMER	1	P,PC ⚠
T1	G4C6AEH00003	POWER TRANSFORMER	1	EX,EQ,EB,EG,EH,GH,GN ⚠
T1	QTPG1M057A	POWER TRANSFORMER	1	GU,GT,GM ⚠
W1	QEXGZA14045A	WIRE W/CON (LCD-MAIN)	1	
W2	QEXGVH06120A	WIRE W/CON (SP-FAJ)	1	
W3	QEXGZA34055D	WIRE WITH CONNECTOR	1	
W4	QEXGVH03075B	WIRE WITH CONNECTOR	1	
W5	QEUGMLW06C	FFC CABLE (FAJ-MAIN)	1	
W6	QEUGMWW06C	FFC CABLE (FAJ-MAIN)	1	
W7	QEXGSS15010B	WIRE W/CON (CPC-CPL)	1	
W8	QEXGSS07030A	WIRE W/CON (CPC-MAIN)	1	
W9	QEXGSS14015B	WIRE W/CON (CPC-CPR)	1	
<MAIN P.C.B.>				
PCB1	SXPG239611	MAIN P.C.B	1	[RTL]
C1	ECJ1VG1H101J	100P	1	
C2	ECJ1VB1C104K	0.1U	1	
C3	ECJ1VB1A224K	0.22U	1	
C4-10	ECJ1VB1C104K	0.1U	7	
C11	ECJ1VB1H103K	0.01U	1	
C12-15	ECJ1VB1C104K	0.1U	4	
C16	ECJ1VG1H030C	3P	1	
C17	ECJ1VB1C104K	0.1U	1	
C18	ECJ1VG1H030C	3P	1	
C19-22	ECJ1VB1C104K	0.1U	4	
C23-26	ECJ1VG1H101J	100P	4	
C27	ECJ1VG1H221J	220P	1	
C28-32	ECJ1VB1C104K	0.1U	5	
C35,36	ECJ1VB1C104K	0.1U	2	
C38	ECJ1VB1C104K	0.1U	1	
C101	ECJ1VB1C104K	0.1U	1	
C102-07	ECJ1VG1H221J	220P	6	
C108	ECJ1VB1C104K	0.1U	1	
C109	ECJ1VG1H100D	10P	1	
C110	ECJ1VB1C104K	0.1U	1	
C111	ECJ1VG1H100D	10P	1	
C112	ECJ1VB1C104K	0.1U	1	
C113	ECJ1VG1H101J	100P	1	
C114	EEVHB1H1R0R	50V 1U	1	
C115	ECJ1VB1C104K	0.1U	1	
C116	EEVHB1H1R0R	50V 1U	1	
C117	ECJ1VB1C104K	0.1U	1	
C118	ECJ1VG1H221J	220P	1	
C119-21	ECJ1VB1C104K	0.1U	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C122	ECJ1VG1H101J	100P	1	
C123-25	ECJ1VB1C104K	0.1U	3	
C126,27	ECJ1VG1H470J	47P	2	
C128,29	ECJ1VB1C104K	0.1U	2	
C130	ECJ1VB1H103K	0.01U	1	
C131,32	ECJ1VB1C104K	0.1U	2	
C133-36	ECJ1VG1H101J	100P	4	
C137	ECJ1VB1C104K	0.1U	1	
C201,02	ECJ1VB1C104K	0.1U	2	
C203,04	ECJ1VG1H100D	10P	2	
C205-07	ECJ1VB1C104K	0.1U	3	
C208	ECJ1VG1H102J	0.001U	1	
C209-13	ECJ1VB1C104K	0.1U	5	
C214	EEEFK0J102P	6V 1000P	1	
C215	ECJ1VB1H222K	2200P	1	
C216	EEVHB0J470R	6V 47U	1	
C217	EEVHB0J101P	6V 100U	1	
C218,19	ECJ1VB1C104K	0.1U	2	
C220,21	ECJ1VG1H471J	470P	2	
C222	EEVHB1H1R0R	50V 1U	1	
C223	EEEFK0J102P	6V 1000P	1	
C224-26	ECJ1VB1C104K	0.1U	3	
C227	EEVHB1C100R	16V 10U	1	
C228	EEVHB0J470R	6V 47U	1	
C229	EEVHB1C100R	16V 10U	1	
C230,31	ECJ1VB1C104K	0.1U	2	
C232	EEVHB0J101P	6V 100U	1	
C233	ECJ1VB1C104K	0.1U	1	
C234,35	EEVHB1H1R0R	50V 1U	2	
C236	ECJ1VB1H222K	2200P	1	
C237	EEEHB1V470P	35V 47U	1	
C238-40	ECJ1VB1A224K	0.22U	3	
C241	ECJ1VG1H102J	0.001U	1	
C242	ECJ1VC1H101J	100P	1	
C243,44	ECJ1VG1H470J	47P	2	
C245,46	ECJ1VB1C104K	0.1U	2	
C247	EEEFK1J470P	63V 47U	1	
C248	EEVHB1H1R0R	50V 1U	1	
C249	ECHU1H104JC9	0.1U	1	
C250	EEVHB1H1R0R	50V 1U	1	
C251	ECHU1H104JC9	0.1U	1	
C252-54	ECJ1VB1C104K	0.1U	3	
C256,57	ECJ1VG1H470J	47P	2	
C258,59	EEVHB1H1R0R	50V 1U	2	
C260	ECJ1VB1C104K	0.1U	1	
C261,62	EEVHB1H1R0R	50V 1U	2	
C263	ECHU1H104JC9	0.1U	1	
C301	ECJ1VB1C104K	0.1U	1	
C302	ECJ1VG1H100D	10P	1	
C303	ECJ1VG1H221J	220P	1	
C304	ECJ1VG1H100D	10P	1	
C305-09	ECJ1VB1C104K	0.1U	5	
C311-15	ECJ1VG1H101J	100P	5	
C316-23	ECJ1VB1C104K	0.1U	8	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C419	ECJ1VB1C104K	0.1U	1	
C424	ECJ1VB1C104K	0.1U	1	
C426	ECJ1VB1C104K	0.1U	1	
C436,37	ECJ1VB1C104K	0.1U	2	
C439-45	ECJ1VB1C104K	0.1U	7	
C446,47	EEVHB1C100R	16V 10U	2	
C448	ECJ1VB1C104K	0.1U	1	
C449	ECJ1VG1H681J	680P	1	
C450,51	EEVHB1H1R0R	50V 1U	2	
C452,53	ECJ1VB1C104K	0.1U	2	
C454,55	ECJ1VG1H102J	0.001U	2	
C456,57	ECJ1VB1C104K	0.1U	2	
C458	ECJ1VG1H151J	150P	1	
C459-61	ECJ1VB1C104K	0.1U	3	
C462	EEVHB1C100R	16V 10U	1	
C463	EEVHB1H1R0R	50V 1U	1	
C464	ECJ1VG1H151J	150P	1	
C465	ECJ1VB1C104K	0.1U	1	
C466,67	ECJ1VG1H471J	470P	2	
C468	EEVHB1H1R0R	50V 1U	1	
C469	ECJ1VB1C104K	0.1U	1	
C470	ECJ1VG1H330J	33P	1	
C471	EEVHB1H2R2R	50V 2.2U	1	
C472	ECJ1VG1H102J	0.001U	1	
C473,74	ECJ1VB1C104K	0.1U	2	
C475	ECJ1VG1H150J	15P	1	
C476	ECJ1VB1C104K	0.1U	1	
C477	ECJ1VG1H102J	0.001U	1	
C478	ECJ1VB1C104K	0.1U	1	
C479	ECJ1VG1H102J	0.001U	1	
C480,81	EEVHP1H1R0R	50V 1U	2	
C482	ECJ1VG1H680J	68P	1	
C483	ECJ1VG1H221J	220P	1	
CN102	K1KA15A00116	CONNECTOR	1	
CN104	K1KA14B00085	CONNECTOR	1	
CN106	K1KA07A00189	CONNECTOR	1	
CN110	K1KA11B00040	CONNECTOR	1	
CN203	K1MN30A00024	CONNECTOR	1	
CN301	K1MN20A00045	CONNECTOR	1	
D1-D3	MA2J11100L	DIODE	3	
D101,02	MA2J11100L	DIODE	2	
D201	MA2QD0100L	DIODE	1	
D202	MAZ80560ML	DIODE	1	
D203	MAZ80330HL	DIODE	1	
D204,05	MA2QD0100L	DIODE	2	
D206	MA2J11100L	DIODE	1	
D207	MA3X152E0L	DIODE	1	
D208	MAZ82700HL	DIODE	1	
D209	MA3X152E0L	DIODE	1	
D210	MA2QD0100L	DIODE	1	
D211	MAZ80560ML	DIODE	1	
D212	MAZ83000ML	DIODE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D213	MA2J11100L	DIODE	1	
D215	MAZ80510LL	DIODE	1	
D216,17	MA2J11100L	DIODE	2	
D220	MA2J11100L	DIODE	1	
D301-08	MA2J11100L	DIODE	8	
D401	MA2Z30400L	DIODE	1	
IC1	C0JBAN000098	IC	1	
IC2	MN103002A	32BIT MICRO CONTROLLER	1	
IC3	C0JBAD000071	IC	1	
IC5	C0JBAE000140	IC	1	
IC6	C0ZBZ0000667	SPECTRAM IC	1	
IC7	C0JBAA000255	IC	1	
IC9	C0JBAA000117	IC	1	
IC10,11	C3ABMG000166	16MDRAME	2	
IC12,13	RFKFXKN2400	FLASH ROM	2	<SPC>
IC14	C3ZBN0000023	64M FRASH ROM	1	
IC18	C0JBAE000098	IC	1	
IC21,22	C0JBAF000232	IC	2	
IC23	C3EBDC000020	EEPROM(2K)	1	
IC101	C0JBAB000180	IC	1	
IC102	C1DB00000607	FDC	1	
IC103	C0JBAZ000856	IC	1	
IC104	C0HBA0000134	IC	1	
IC105	C0JBAZ001264	IC	1	
IC106	C0JBAZ000514	IC	1	
IC107	C0JBAZ001264	IC	1	
IC108	C0JBAA000115	IC	1	
IC109	C0JBAZ000853	IC	1	
IC201	C3ABMG000160	IC	1	
IC202	C0JBAA000148	IC	1	
IC203	C0JBAZ000519	IC	1	
IC204	C2HBZA000008	DSP IC	1	
IC205	C0BBBB000014	IC	1	
IC206	C0EBD0000141	IC	1	
IC207	PCM1716ET2	IC	1	
IC208	C0FBAJ000004	IC	1	
IC209,10	M5218AFPE3	IC	2	
IC211	C1BB00000637	IC	1	
IC301	C1BB00000709	TONE GENERATOR	1	
IC302	C3ZBP0000003	IC	1	
IC303	C3ZBP0000004	IC	1	
IC406	C0JBAA000115	IC	1	
IC407	C0JBAC000113	IC	1	
IC408	C2CBGF000150	USB MICRO CONTROLLER	1	
IC409	PCM1716ET2	IC	1	
IC410	C2BBGE000618	USB AUDIO	1	
IC411	M5218AFPE3	IC	1	
IC412	C0FBAJ000004	IC	1	
IC413	C0JBAZ000529	IC	1	
IC414	C0JBAF000322	IC	1	
JP201	ERJ3GEY0R00V	0	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
L201,02	G1C101K00032	COIL	2	
L401	G1C6R8J00003	COIL	1	
Q1	2SB0709ARL	TRANSISTOR	1	
Q2	2SD0601AQL	TRANSISTOR	1	
Q101,02	2SD0601AQL	TRANSISTOR	2	
Q103	UNR511N00L	TRANSISTOR	1	
Q104	UNR521600L	TRANSISTOR	1	
Q105,06	2SB0709ARL	TRANSISTOR	2	
Q201	2SD0601AQL	TRANSISTOR	1	
Q202	2SB14400RL	TRANSISTOR	1	
Q203	2SB970-QRSTX	TRANSISTOR	1	
Q204	2SD2185RS	TRANSISTOR	1	
Q205	2SD0601AQL	TRANSISTOR	1	
Q206	2SB0709ARL	TRANSISTOR	1	
Q207	2SD0601AQL	TRANSISTOR	1	
Q208	2SB0709ARL	TRANSISTOR	1	
Q209	2SB14400RL	TRANSISTOR	1	
Q210	2SD2185RS	TRANSISTOR	1	
Q211	2SD0601AQL	TRANSISTOR	1	
Q212	2SB0709ARL	TRANSISTOR	1	
R1,R2	ERJ3GEYJ101V	100	2	
R3	ERJ3GEYJ102V	1K	1	
R4	ERJ3GEYJ472V	4.7K	1	
R5	ERJ3GEYJ104V	100K	1	
R6	ERJ3GEYJ102V	1K	1	
R7	ERJ3GEYJ104V	100K	1	
R8	ERJ3GEYJ472V	4.7K	1	
R10	ERJ3GEYJ103V	10K	1	
R12	ERJ3GEYJ472V	4.7K	1	
R13	ERJ3GEYJ470V	47	1	
R14	ERJ3GEY0R00V	0	1	
R15,16	ERJ3GEYJ470V	47	2	
R17	ERJ3GEY0R00V	0	1	
R18	ERJ3GEYJ470V	47	1	
R19	ERJ3GEYJ472V	4.7K	1	
R20-23	ERJ3GEYJ470V	47	4	
R24	ERJ3GEYJ101V	100	1	
R25-27	ERJ3GEYJ472V	4.7K	3	
R28	ERJ3GEYJ471V	470	1	
R30-34	ERJ3GEYJ472V	4.7K	5	
R35	ERJ3GEYJ470V	47	1	
R36,37	ERJ3GEYJ472V	4.7K	2	
R38	ERJ3GEYJ330V	33	1	
R39,40	ERJ3GEYJ470V	47	2	
R42	ERJ3GEYJ331V	330	1	
R43,44	ERJ3GEY0R00V	0	2	
R45	ERJ3GEYJ332V	3.3K	1	
R46,47	ERJ3GEYJ472V	4.7K	2	
R48	ERJ3GEYJ222V	2.2K	1	
R101-03	ERJ3GEYJ470V	47	3	
R104	ERJ3GEYJ102V	1K	1	
R105	ERJ3GEYJ105V	1M	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R106	ERJ3GEYJ221V	220	1	
R107	ERJ3GEYJ470V	47	1	
R108	ERJ3GEYJ221V	220	1	
R109	ERJ3GEYJ105V	1M	1	
R110-13	ERJ3GEYJ331V	330	4	
R114	ERJ3GEYJ474V	470K	1	
R115	ERJ3GEYJ472V	4.7K	1	
R116	ERJ3GEYJ152V	1.5K	1	
R117	ERJ3GEYJ124V	120K	1	
R118,19	ERJ3GEYJ101V	100	2	
R120,21	ERJ3GEYJ470V	47	2	
R122,23	ERJ3GEYJ472V	4.7K	2	
R124	ERJ3GEYJ103V	10K	1	
R125	ERJ3GEYJ101V	100	1	
R126-28	ERJ3GEYJ472V	4.7K	3	
R129	ERJ3GEYJ470V	47	1	
R130	ERJ3GEY0R00V	0	1	
R132,33	ERJ3GEYJ472V	4.7K	2	
R136,37	ERJ3GEYJ472V	4.7K	2	
R201-04	ERJ3GEYJ221V	220	4	
R205	ERJ3GEYJ105V	1M	1	
R206,07	ERJ3GEYJ101V	100	2	
R209-11	ERJ3GEYJ221V	220	3	
R212	ERJ3GEYJ102V	1K	1	
R214	ERJ3GEYJ471V	470	1	
R215	ERJ3GEYJ151V	150	1	
R216	ERJ3GEYJ102V	1K	1	
R217	ERJ3GEYJ471V	470	1	
R218	ERJ3GEYJ680V	68	1	
R219	ERJ3GEYJ151V	150	1	
R220	ERJ3GEYJ221V	220	1	
R221	ERJ3GEYJ103V	10K	1	
R222	ERJ3GEYJ472V	4.7K	1	
R223	ERJ3GEYJ334V	330K	1	
R224	ERJ3GEYJ222V	2.2K	1	
R225,26	ERJ3GEYJ471V	470	2	
R227	ERJ1WRQJR33U	1W 0.33	1	
R228	ERJ3GEYJ331V	330	1	
R229	ERJ3GEYJ101V	100	1	
R230	ERJ3GEYJ681V	680	1	
R231,32	ERJ3GEYJ473V	47K	2	
R233,34	ERJ3GEYJ471V	470	2	
R235,36	ERJ3GEYJ151V	150	2	
R237	ERJ3GEYJ331V	330	1	
R238,39	ERJ3GEYJ103V	10K	2	
R240,41	ERJ3GEYJ151V	150	2	
R242	ERJ3GEYJ220V	22	1	
R243	ERJ3GEYJ221V	220	1	
R244	ERJ3GEYJ472V	4.7K	1	
R245	ERJ3GEYJ102V	1K	1	
R246	ERJ3GEYJ224V	220K	1	
R247,48	ERJ3GEYJ104V	100K	2	
R249,50	ERJ3GEYJ332V	3.3K	2	
R251	ERJ3GEYJ472V	4.7K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R252	ERJ3GEYJ471V	470	1	
R253	ERJ3GEYJ152V	1.5K	1	
R254	ERJ1WRQJR33U	1W 0.33	1	
R255,56	ERJ3GEYJ331V	330	2	
R257	ERJ3GEYJ102V	1K	1	
R258,59	ERJ3GEYJ473V	47K	2	
R260	ERJ3GEYJ104V	100K	1	
R261	ERJ3GEYJ393V	39K	1	
R262	ERJ3GEYJ104V	100K	1	
R263	ERJ3GEYJ393V	39K	1	
R267	ERJ3GEYJ104V	100K	1	
R269	ERJ3GEYJ104V	100K	1	
R273	ERJ3GEYJ472V	4.7K	1	
R275	ERJ3GEYJ472V	4.7K	1	
R276,77	ERJ3GEYJ102V	1K	2	
R279	ERJ3GEY0R00V	0	1	
R301	ERJ3GEYJ105V	1M	1	
R302-06	ERJ3GEYJ470V	47	5	
R307	ERJ3GEYJ472V	4.7K	1	
R308	ERJ3GEYJ221V	220	1	
R309,10	ERJ3GEYJ470V	47	2	
R311	ERJ3GEYJ221V	220	1	
R312	ERJ3GEYJ470V	47	1	
R313-19	ERJ3GEYJ221V	220	7	
R321-26	ERJ3GEYJ221V	220	6	
R328,29	ERJ3GEYJ221V	220	2	
R330,31	ERJ3GEYJ103V	10K	2	
R427	ERJ3GEYJ105V	1M	1	
R434-38	ERJ3GEYJ470V	47	5	
R439	ERJ3GEYJ101V	100	1	
R440-42	ERJ3GEYJ472V	4.7K	3	
R443	ERJ3GEYJ101V	100	1	
R444-47	ERJ3GEY0R00V	0	4	
R448	ERJ3GEYJ102V	1K	1	
R449	ERJ3GEYJ472V	4.7K	1	
R450	ERJ3GEYJ103V	10K	1	
R451,52	ERJ3GEY0R00V	0	2	
R453,54	ERJ3GEYJ472V	4.7K	2	
R455,56	ERJ3GEYJ682V	6.8K	2	
R457	ERJ3GEYJ333V	33K	1	
R458,59	ERJ3GEYJ330V	33	2	
R460	ERJ3GEYJ471V	470	1	
R461	ERJ3GEYJ333V	33K	1	
R462	ERJ3GEY0R00V	0	1	
R463	ERJ3GEYJ472V	4.7K	1	
R464	ERJ3GEYJ473V	47K	1	
R466	ERJ3GEYJ152V	1.5K	1	
R468,69	ERJ3GEYJ102V	1K	2	
R470,71	ERJ3GEYJ822V	8.2K	2	
R472	ERJ3GEYJ105V	1M	1	
X1	H0J800400015	OSC	1	
X101	H0J240500016	24MHZ OSCILATOR	1	
X201	H0J250500016	25MHZ OSCILATOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
X301	H0J169300002	OSCILATOR	1	
Z1,Z2	EXBV8V472JV	4.7K	2	
Z3	EXBV8V470JV	47	1	
Z4-12	EXBV8V472JV	4.7K	9	
Z13	EXBV8V101JV	100	1	
Z14-23	EXBV8V472JV	4.7K	10	
Z101,02	EXBV8V470JV	47	2	
Z103	EXBV8V102JV	1K	1	
Z104	EXBV8V221JV	220	1	
Z105,06	EXBV8V472JV	4.7K	2	
Z107,08	EXBV8V101JV	100	2	
Z109	EXBV8V470JV	47	1	
Z110-12	EXBV8V472JV	4.7K	3	
Z201,02	EXBV8V472JV	4.7K	2	
Z203	EXBV8V101JV	100	1	
Z204	EXBV8V470JV	47	1	
Z301,02	EXBV8V223JV	22K	2	
Z303-05	EXBV8V470JV	47	3	
Z306	EXBV8V101JV	100	1	
Z307,08	EXBV8V472JV	4.7K	2	
Z309-11	EXBV8V101JV	100	3	
Z312-21	EXBV8V221JV	220	10	
Z401	EXBV8V101JV	100	1	
<MKB1 P.C.B.>				
PCB2	SXPG239811A	MKB1 P.C.B.	1	[RTL]
C2,C3	F1E1H473A001	0.047U	2	
C10-17	F1D1H151A012	CERAMIC CAPACITOR	8	
CN11	K1MP10A00003	CONNECTOR(10P)	1	
CN12	K1MP09A00002	9P WIRE HOLDER	1	
CN13,14	K1MP03A00004	3P CONNECTOR	2	
D1-D5	RVD1SS133TA	DIODE	5	
D7-48	RVD1SS133TA	DIODE	42	
IC1	TC74HC138AP	CMOS IC	1	
<MKB2 P.C.B.>				
PCB3	SXPG239811B	MKB2 P.C.B.	1	[RTL]
C4,C5	F1E1H473A001	0.047U	2	
C20-27	F1D1H151A012	CERAMIC CAPACITOR	8	
D49-96	RVD1SS133TA	DIODE	48	
IC2	TC74HC138AP	CMOS IC	1	
WIRE1	QEUGP7K20YDZ	WIRE (MKB2-FAJ)	1	
WIRE6	QEUGPAK25YDZ	WIRE (MKB2-FAJ)	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
WIRE9	QEUGS8K06AYZ	WIRE(MKB2-MKB3)	1	
WIRE10	QEUGS8K08AYZ	WIRE(MKB2-MKB3)	1	
WIRE11	QEUGSAK08AYZ	WIRE(MKB1-MKB2)	1	
WIRE12	QEUGS9K06AYZ	WIRE(MKB1-MKB2)	1	
<MKB3 P.C.B.>				
PCB4	SXPG234411	MKB3 P.C.B.	1	[RTL]
CN9,10	K1MP08A00006	CONNECTOR(8P)	2	
D97-22	RVD1SS133TA	DIODE	26	
<ACP P.C.B.>				
PCB5	SXPG232941	ACP P.C.B.	1	[RTL]EX,EB,EG,EH,EQ,GN,G ⚠
PCB5	SXPG232951	ACP P.C.B.	1	[RTL]P,PC ⚠
PCB5	SXPG232961	ACP P.C.B.	1	[RTL]GU,GM,GT ⚠
C1	F1B2E4720001	CAPACITOR	1	⚠
C2	ECQU2A104MN	0.1U	1	⚠
CN1	SJPG7JS020A	VH CN	1	
CN2	SJPG7JS040A	VH CN	1	
F1	XBA1C20NB100	FUSE 2A	1	P,PC ⚠
F1	XBA2C12TB0L	FUSE T1.25A	1	GU,GT,GM ⚠;
F2	XBA2C08TB0L	FUSE T800MA	1	GU,GT,GM ⚠
F3	XBA2C08TB0L	FUSE T800MA	1	EX,EB,EQ,EG,EF,EH,EV,GN,(⚠
JK1	SJVD0203B	AC INLET	1	⚠
L1	QLQGT2T100LA	LINE FILTER	1	⚠
S1	SSRG100A	SW VOLTAGE SELECTOR	1	GU,GT,GM ⚠
<FAJ P.C.B.>				
PCB6	SXPG239711	FAJ P.C.B.	1	[RTL]
C602	EECS5R5V105	5.5V 1U	1	
C603,04	F1E1H473A001	0.047U	2	
C605	ECCW3F180JGE	18P	1	
C606	F1D1H221A012	220P	1	
C607	F1E1H473A001	0.047U	1	
C608	ECA1AAK221XB	6V 220U	1	
C609	F1E1H473A001	0.047U	1	
C610	ECQB1H473JF3	0.047U	1	
C611-17	F1E1H473A001	0.047U	7	
C618	F1D1H470A006	47P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C619-21	F1E1H473A001	0.047U	3	
C622	ECQV1H154JZ3	0.15U	1	
C623	ECQB1H223JF3	0.022U	1	
C624	ECQV1H154JZ3	0.15U	1	
C625	ECQB1H223JF3	0.022U	1	
C626,27	F1E1H473A001	0.047U	2	
C628	ECQB1H222JF3	0.0022U	1	
C629	ECQV1H104JZ	0.1U	1	
C630	ECQV1H683JZ3	0.068U	1	
C631	F1E1H473A001	0.047U	1	
C632	ECA1CAK100XB	16V 10U	1	
C633	ECQB1H222JF3	0.0022U	1	
C634	ECQV1H104JZ	0.1U	1	
C635	ECQV1H683JZ3	0.068U	1	
C636	ECQB1H153JF3	0.015U	1	
C637	ECQB1H102JF3	0.001U	1	
C638	ECQB1H153JF3	0.015U	1	
C639	ECQB1H102JF3	0.001U	1	
C640	ECEA1HKN010B	50V 1U	1	
C641,42	F1E1H473A001	0.047U	2	
C643	ECEA1HKN010B	50V 1U	1	
C644,45	F1E1H473A001	0.047U	2	
C646,47	ECA1CAK100XB	16V 10U	2	
C648,49	F1E1H473A001	0.047U	2	
C650	F1D1H470A006	47P	1	
C651,52	ECQB1H102JF3	0.001U	2	
C653	ECA1HAK010XI	50V 1U	1	
C654	ECEA1HKN010B	50V 1U	1	
C655,56	ECQB1H102JF3	0.001U	2	
C657	F1D1H101A012	100P	1	
C658	F1D1H470A006	47P	1	
C659,60	ECA1CAK101XB	16V 100U	2	
C661	F1D1H470A006	47P	1	
C662	ECQV1H104JZ	0.1U	1	
C663	ECA0JAK470XH	6V 47U	1	
C664	ECA1HAK010XI	50V 1U	1	
C665	F1E1H473A001	0.047U	1	
C666	ECBT1H150JC5	15P	1	
C667	ECEA1HKN010B	50V 1U	1	
C668	F1E1H473A001	0.047U	1	
C669	ECQV1H104JZ	0.1U	1	
C670,71	F1E1H473A001	0.047U	2	
C672	ECQB1H222JF3	0.0022U	1	
C673	ECQV1H334JZ3	0.33U	1	
C674	F1E1H473A001	0.047U	1	
C675,76	ECA1EM682	25V 6800U	2	
C677,78	ECQB1H222JF3	0.0022U	2	
C679	ECQB1H472JF3	0.0047U	1	
C680	ECQB1H222JF3	0.0022U	1	
C681,82	ECQV1H105JZ3	1U	2	
C683	F1E1H473A001	0.047U	1	
C684	ECQE1A104M6	125V 0.1U	1	
C685,86	F1D1H470A006	47P	2	
C687	ECBT1H150JC5	15P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C688	ECA1HAK2R2XB	50V 2.2U	1	
C689	ECA1HAK100XB	50V 10U	1	
C690-94	F1D1H470A006	47P	5	
C695	F1E1H473A001	0.047U	1	
C696	F1D1H102A012	0.001U	1	
C697-02	F1E1H473A001	0.047U	6	
CN601	RJS2A5630	CONNECTOR(30P)	1	
CN602	K1MP04A00003	CONNECTOR(4P)	1	
CN605	K1FB104B0023	USB CONNECTOR	1	
CN607	K1KA02B00185	CCFL CONNECTOR	1	
CN608	K1KB07A00016	7P CONNECTOR	1	
CN609	K1MP10A00003	CONNECTOR(10P)	1	
CN610	K1MN20A00047	CONNECTOR	1	
CN611	SJPG1320A	CONNECTOR	1	
CN612	SJPG7JS030A	CONNECTOR	1	
D601	MAZ2051000LF	ZENER DIODE	1	
D602	MAZ2062000LF	ZENER DIODE	1	
D603-05	RVD1SS133TA	DIODE	3	
D606	AK03WK	DIODE	1	
D607	RVD1SS133TA	DIODE	1	
D608-11	SVDGS3V20-15	DIODE	4	
D612,13	B0EAKM000061	DIODE	2	
D618	AK03WK	DIODE	1	
D619-22	SVDGS3V20-15	DIODE	4	
FP601	K5G102AA0003	FUSE PROTECTOR	1	⚠
FP602,03	K5G402AA0003	FUSE PROTECTOR	2	⚠
IC601	PC900V	PHOTO CPUPLER	1	
IC602-06	NJM4558L	OP AMP	5	
IC607	C0CAALG00016	REGULATOR IC	1	
IC608	C0CABLG00006	REGULATOR IC	1	
IC609	RSN35H1A-P	POWER IC	1	
JK601,02	QJJG020AA	JACK(MIDI)	2	
JK603	QJJG010AA	JACK(EXP)	1	
JK604-06	QJJG019AA	JACK	3	
JK607,08	QJJG010AA	JACK(EXP)	2	
L601-03	G0ZZ00002172	COIL	3	
L604	G0C101K00030	COIL	1	
L605-09	G0ZZ00002172	COIL	5	
Q601,02	2SD0592ARA	TRANSISTOR	2	
Q603	B1ACCF000016	TRANSISTOR	1	
Q604,05	B1AACF000023	TRANSISTOR	2	
Q606	B1ACCF000016	TRANSISTOR	1	
Q607	B1AACF000023	TRANSISTOR	1	
Q608	B1ACCF000016	TRANSISTOR	1	
Q609-11	B1AACF000023	TRANSISTOR	3	
R613	ERDS2TJ470T	47	1	

[illegible]	[illegible]	[illegible]	[illegible]	

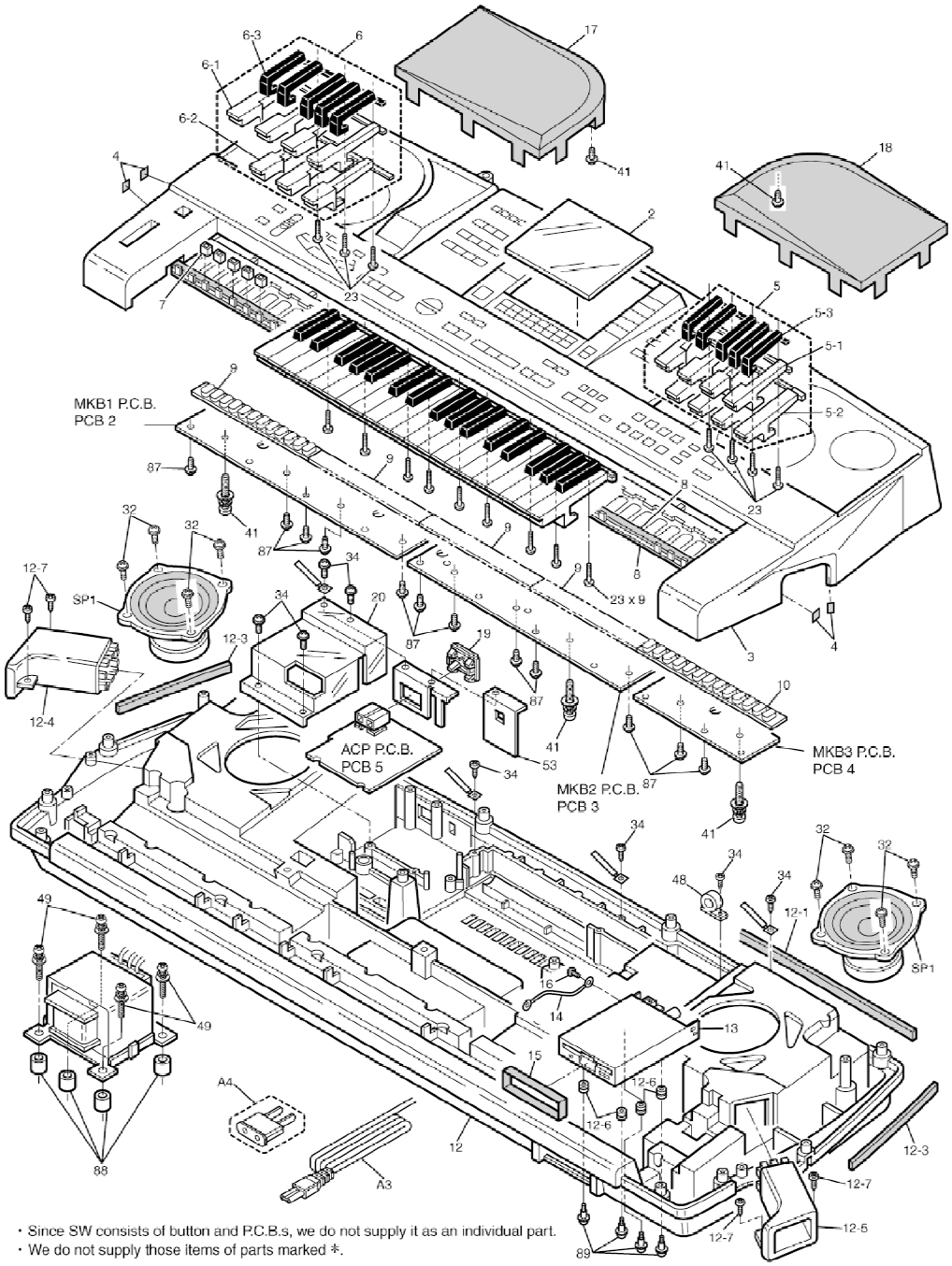
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R614	ERDS2TJ102T	1K	1	
R615	ERDS2TJ680T	68	1	
R616	ERDS2TJ104T	100K	1	
R617	ERDS2TJ151T	150	1	
R619	ERDS2TJ682T	6.8K	1	
R620	ERDS2TJ102T	1K	1	
R621	ERDS2TJ682T	6.8K	1	
R622,23	ERDS2TJ102T	1K	2	
R624	ERDS2TJ103T	10K	1	
R625	ERDS2TJ124T	120K	1	
R626	ERDS2TJ103T	10K	1	
R627	ERDS2TJ124T	120K	1	
R628	ERDS2TJ103T	10K	1	
R629	ERDS2TJ223T	22K	1	
R630	ERDS2TJ392T	3.9K	1	
R631	ERDS2TJ472T	4.7K	1	
R632	ERDS2TJ103T	10K	1	
R633	ERDS2TJ223T	22K	1	
R634	ERDS2TJ392T	3.9K	1	
R635	ERDS2TJ472T	4.7K	1	
R636	ERDS2TJ823T	82K	1	
R637	ERDS2TJ272T	2.7K	1	
R638	ERDS2TJ823T	82K	1	
R639	ERDS2TJ272T	2.7K	1	
R640	ERDS2TJ333T	33K	1	
R641	ERDS2TJ154T	150K	1	
R642-44	ERDS2TJ333T	33K	3	
R645	ERDS2TJ222T	2.2K	1	
R646	ERDS2TJ223T	22K	1	
R647	ERDS2TJ103T	10K	1	
R648	ERDS2TJ104T	100K	1	
R649	ERDS2TJ102T	1K	1	
R650	ERDS2TJ562T	5.6K	1	
R651	ERDS2TJ220T	22	1	
R652	ERDS2TJ562T	5.6K	1	
R653	ERDS2TJ221T	220	1	
R654,55	ERDS2TJ683T	68K	2	
R656	ERDS2TJ223T	22K	1	
R657	ERDS2TJ103T	10K	1	
R658,59	ERDS2TJ104T	100K	2	
R660	ERDS2TJ152T	1.5K	1	
R661	ERDS2TJ102T	1K	1	
R662	ERDS2TJ222T	2.2K	1	
R663	ERDS2TJ220T	22	1	
R664	ERDS2TJ222T	2.2K	1	
R665	ERDS2TJ103T	10K	1	
R666	ERD25FVJ100T	100	1	
R667	ERDS2TJ334T	330K	1	
R668	ERDS2TJ683T	68K	1	
R669	ERD25FVJ100T	100	1	
R670,71	ERD2FCVJ6R8T	6.8	2	⚠
R672,73	ERDS2TJ101T	100	2	
R674,75	ERDS2TJ681T	680	2	
R676	ERDS2TJ472T	4.7K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R677,78	ERG1SJ680E	1W 68	2	
R679	ERDS2TJ104T	100K	1	
R680,81	ERDS2TJ103T	10K	2	
R682	ERD2FCVG470T	47	1	⚠
R683	ERDS2TJ153T	15K	1	
R684	ERDS2TJ683T	68K	1	
R685,86	ERDS2TJ470T	47	2	
R687,88	ERDS2TJ103T	10K	2	
R689,90	ERDS2TJ683T	68K	2	
R691,92	ERDS2TJ223T	22K	2	
R693,94	ERDS2TJ470T	47	2	
T601	QTDG003A	INVERTER TRANS	1	
VR601	D2BCB53B0004	MIC VOLUME	1	
<CPL P.C.B.>				
PCB7	SXPG230241A	CPL P.C.B.	1	[RTL]
C7	F1E1H473A001	0.047U	1	
CN5	K1KA15B00017	CONNECTOR	1	
D206	RVD1SS133TA	DIODE	1	
D241-45	RVD1SS133TA	DIODE	5	
D249-54	RVD1SS133TA	DIODE	6	
D330	LNJ382GKGX02	LED (GREEN)	1	
D333	LNJ282RKRX02	LED (RED)	1	
D338	LNJ282RKRX02	LED (RED)	1	
L3	QLBG005A	COIL	1	
SW206	EVQ21507K	CP SW	1	
SW241-45	EVQ21507K	CP SW	5	
SW249-54	EVQ21507K	CP SW	6	
VR1	D2B6A24B0003	RHYTHM VOLUME	1	
<CPR P.C.B.>				
PCB8	SXPG230241B	CPR P.C.B.	1	[RTL]
CN4	K1KA14B00034	CONNECTOR	1	
D65-68	RVD1SS133TA	DIODE	4	
D73-76	RVD1SS133TA	DIODE	4	
D81-83	RVD1SS133TA	DIODE	3	
D89-92	RVD1SS133TA	DIODE	4	
D149-59	LNJ382GKGX02	LED (GREEN)	11	
D161,62	LNJ382GKGX02	LED (GREEN)	2	
D163	LNJ282RKRX02	LED (RED)	1	
L2	QLBG005A	COIL	1	

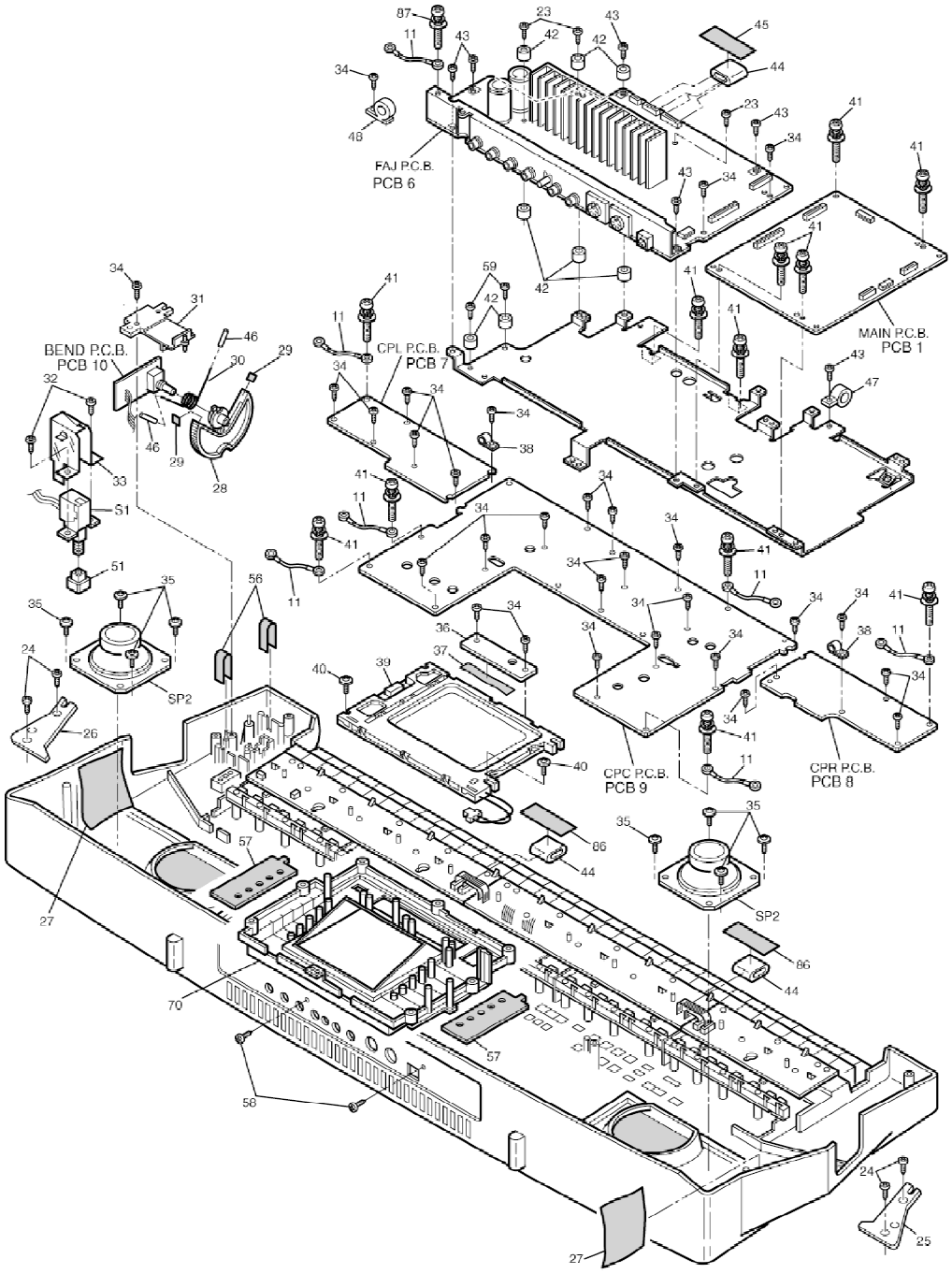
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
SW65-68	EVQ21507K	CP SW	4	
SW73-76	EVQ21507K	CP SW	4	
SW81-83	EVQ21507K	CP SW	3	
SW89-92	EVQ21507K	CP SW	4	
<CPC P.C.B.>				
PCB9	SXPG230241C	CPC P.C.B.	1	[RTL]
C1	ECA1AAK221XB	6V 220U	1	
C2	ECA0JAK470XB	6V 47U	1	
C3-C6	F1E1H473A001	0.047U	4	
C8	ECA1AAK221XB	6V 220U	1	
C11	F1E1H473A001	0.047U	1	
C12	ECA0JAK470XB	6V 47U	1	
C13-18	F1E1H473A001	0.047U	6	
CN1	K1KA07B00027	CONNECTOR	1	
CN2	K1KA14B00034	CONNECTOR	1	
CN3	K1KA15B00017	CONNECTOR	1	
D1-D5	RVD1SS133TA	DIODE	5	
D9-31	RVD1SS133TA	DIODE	23	
D33-39	RVD1SS133TA	DIODE	7	
D41-63	RVD1SS133TA	DIODE	23	
D101-05	LNJ282RKRX02	LED (RED)	5	
D109-19	LNJ282RKRX02	LED (RED)	11	
D120,21	LNJ382GKGX02	LED (GREEN)	2	
D122	LNJ282RKRX02	LED (RED)	1	
D125-31	LNJ282RKRX02	LED (RED)	7	
D133-35	LNJ282RKRX02	LED (RED)	3	
D136-38	LNJ382GKGX02	LED (GREEN)	3	
D139	LNJ282RKRX02	LED (RED)	1	
D201-05	RVD1SS133TA	DIODE	5	
D209-32	RVD1SS133TA	DIODE	24	
D234-40	RVD1SS133TA	DIODE	7	
D301-03	LNJ382GKGX02	LED (GREEN)	3	
D304,05	LNJ282RKRX02	LED (RED)	2	
D309-14	LNJ282RKRX02	LED (RED)	6	
D317-22	LNJ282RKRX02	LED (RED)	6	
D325-27	LNJ282RKRX02	LED (RED)	3	
D328,29	LNJ382GKGX02	LED (GREEN)	2	
D334-36	LNJ282RKRX02	LED (RED)	3	
D337	LNJ382GKGX02	LED (GREEN)	1	
IC1	C2BBDB000023	U-COM	1	
IC2,C3	C0JACB000006	LOGIC IC	2	
IC4	C2BBDB000023	U-COM	1	
IC5	C0JACB000006	LOGIC IC	1	
L1	QLBG005A	COIL	1	
Q1-10	2SA830STPB	TRANSISTOR	10	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R5,R6	ERDS2TJ101T	100	2	
R7	ERDS2TJ103T	10K	1	
R8	ERDS2TJ333T	33K	1	
R9	ERDS2TJ103T	10K	1	
R11-23	ERDS2TJ103T	10K	13	
R24-35	ERDS2TJ680T	68	12	
R40	ERDS2TJ102T	1K	1	
R45,46	ERDS2TJ101T	100	2	
R47,48	ERDS2TJ103T	10K	2	
R49	ERDS2TJ333T	33K	1	
R51-63	ERDS2TJ103T	10K	13	
R64-69	ERDS2TJ680T	68	6	
R70-72	ERDS2TJ102T	1K	3	
SW1-W5	EVQ21507K	CP SW	5	
SW9-31	EVQ21507K	CP SW	23	
SW33-39	EVQ21507K	CP SW	7	
SW41-63	EVQ21507K	CP SW	23	
SW201-05	EVQ21507K	CP SW	5	
SW209-32	EVQ21507K	CP SW	24	
SW234-40	EVQ21507K	CP SW	7	
W3	QEUGP4K16YDZ	WIRE	1	
X1,X2	EF0EC4004T3	OSC	2	
<BEND P.C.B.>				
PCB10	SXPG230241D	BEND P.C.B.	1	[RTL]
R80,81	EROS2TKF1001	RESISTOR	2	
VR3	D2BEA5420003	BEND VOLUME	1	
W2	QEUGP3K16YDZ	WIRE 3P	1	

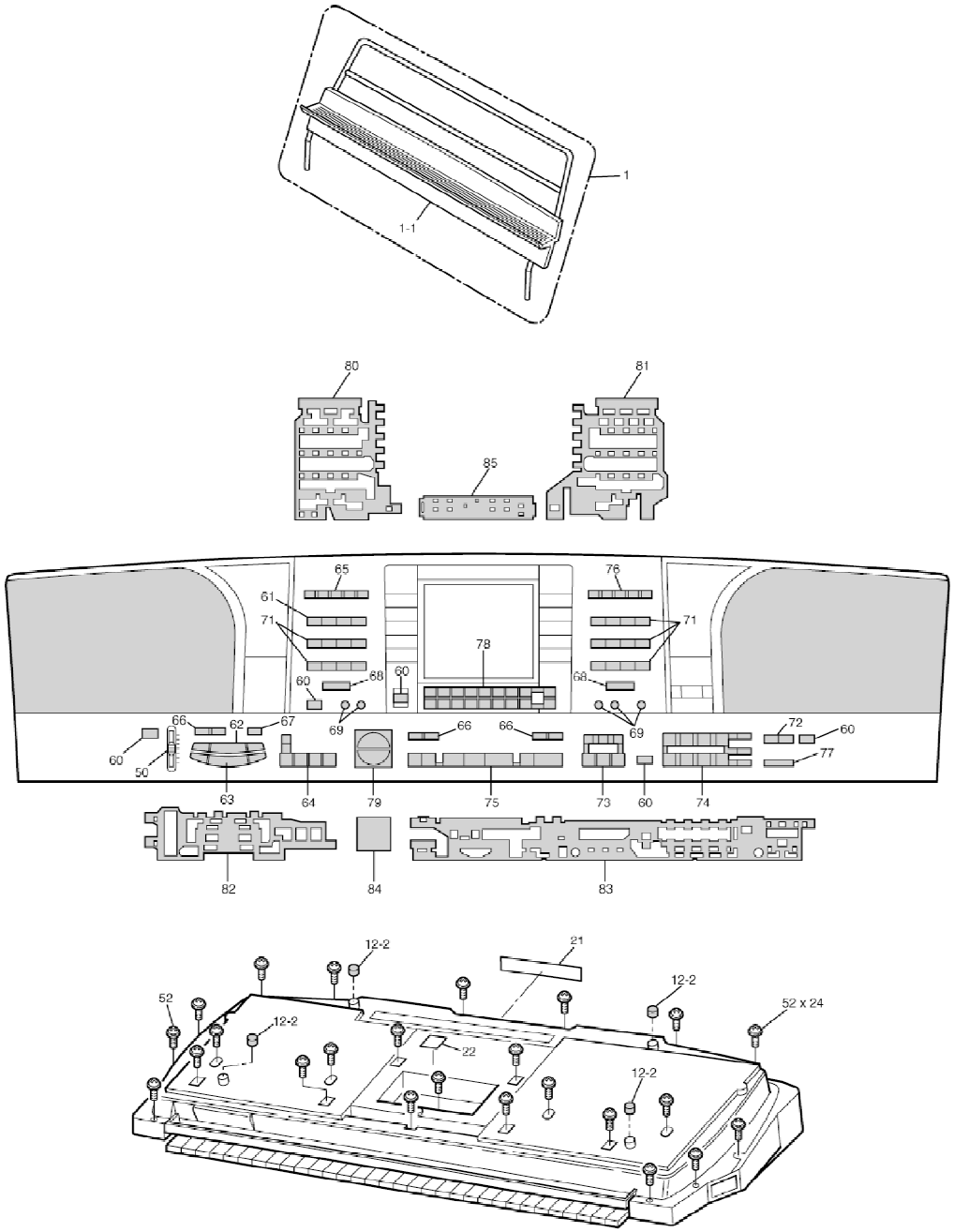
16. Cabinet Parts Location



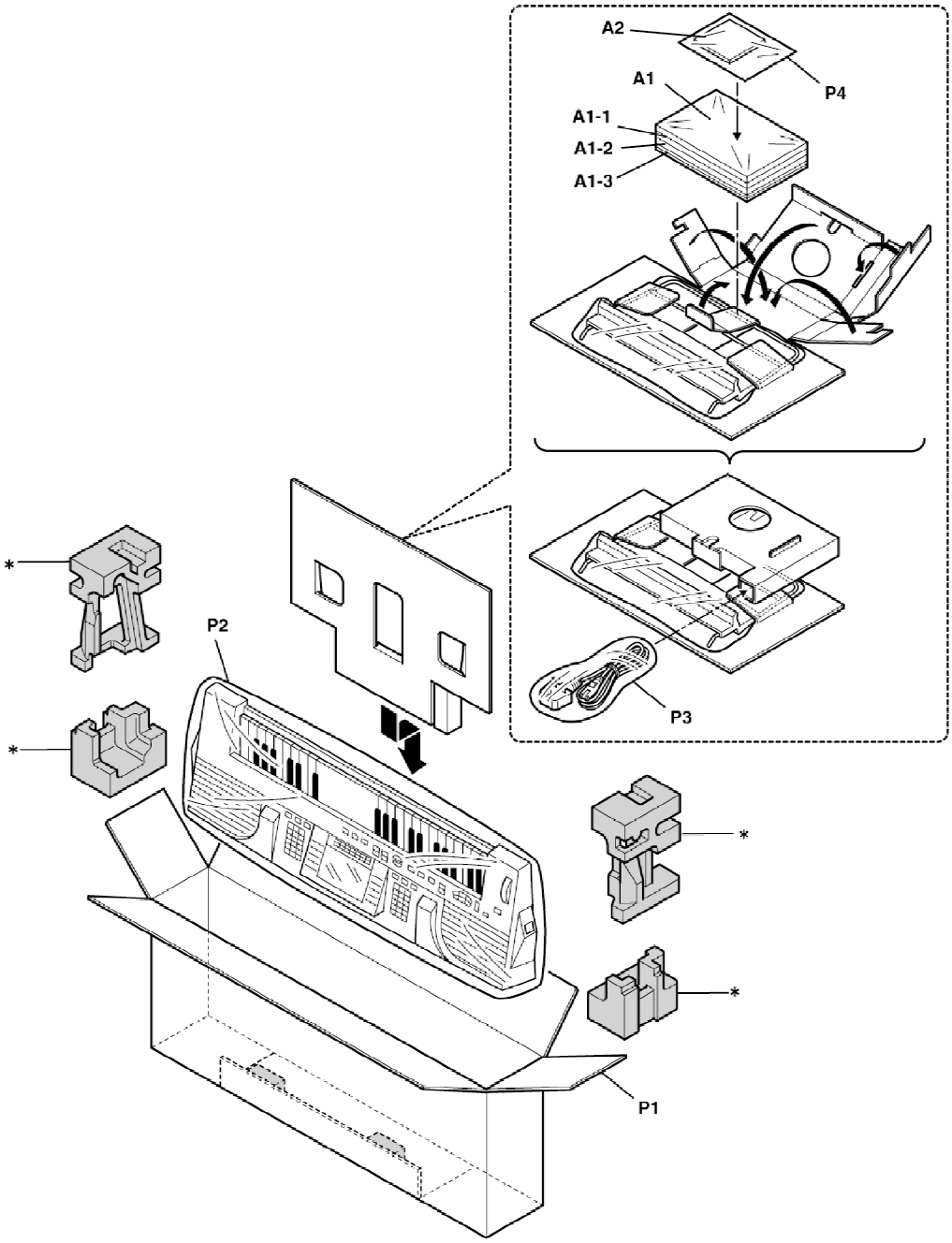
・Since SW consists of button and P.C.B.s, we do not supply it as an individual part.
・We do not supply those items of parts marked ＊.



17. Control Panel Parts Location



18. Packaging

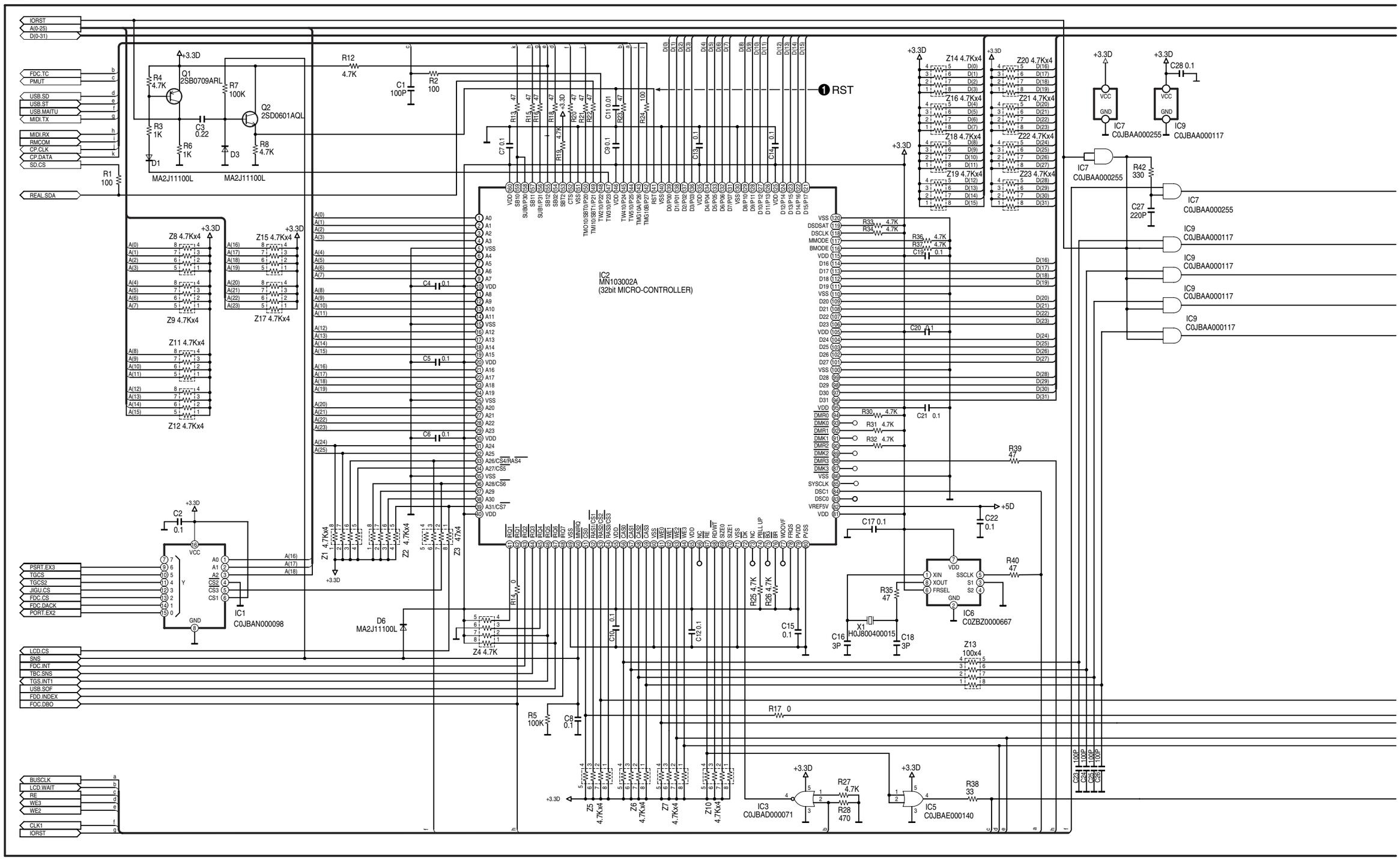


19. Schematic Diagram for printing with A4

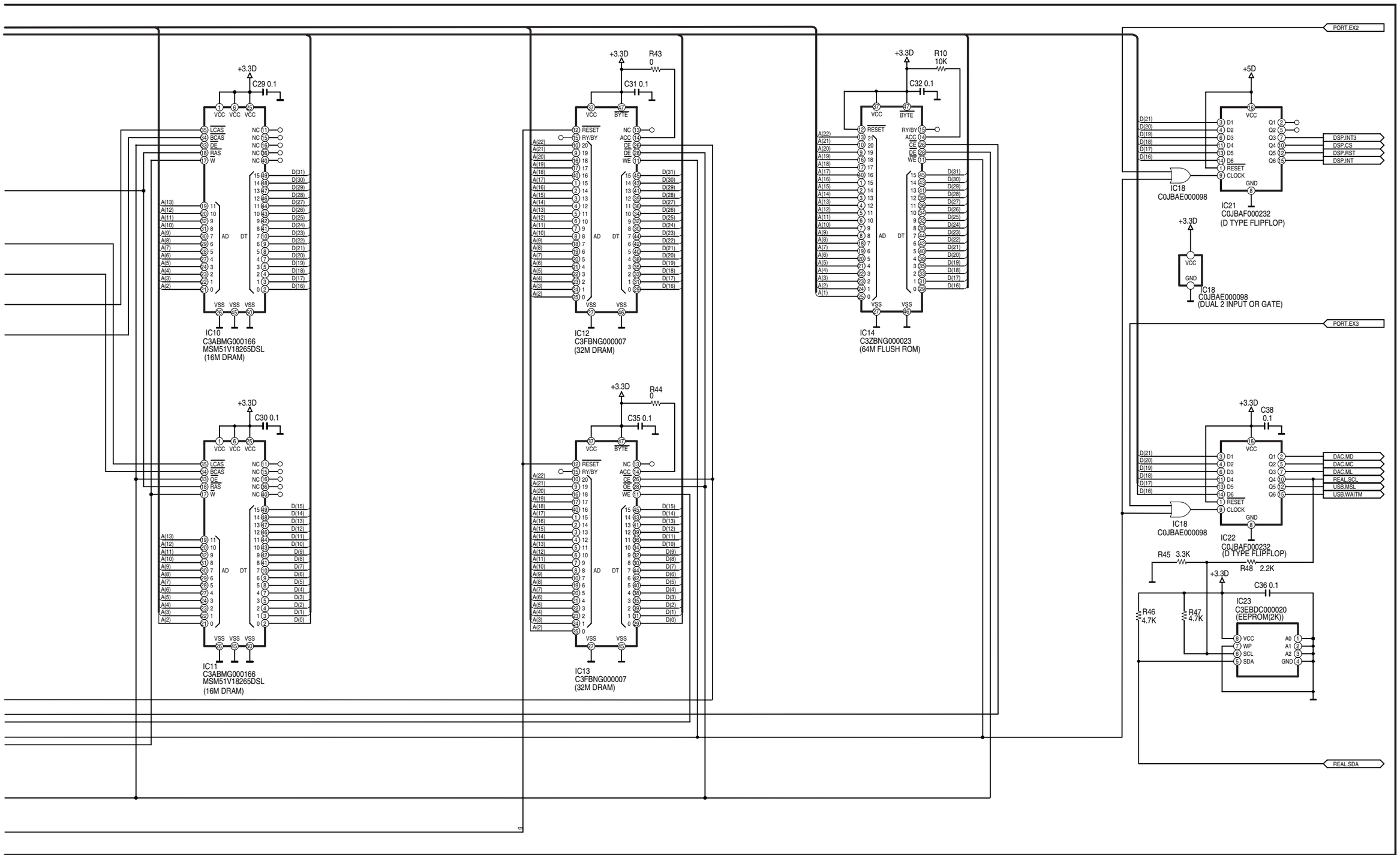
S030500000 HM/AM

SCHEMATIC DIAGRAM-1

A MAIN 1/5 CIRCUIT



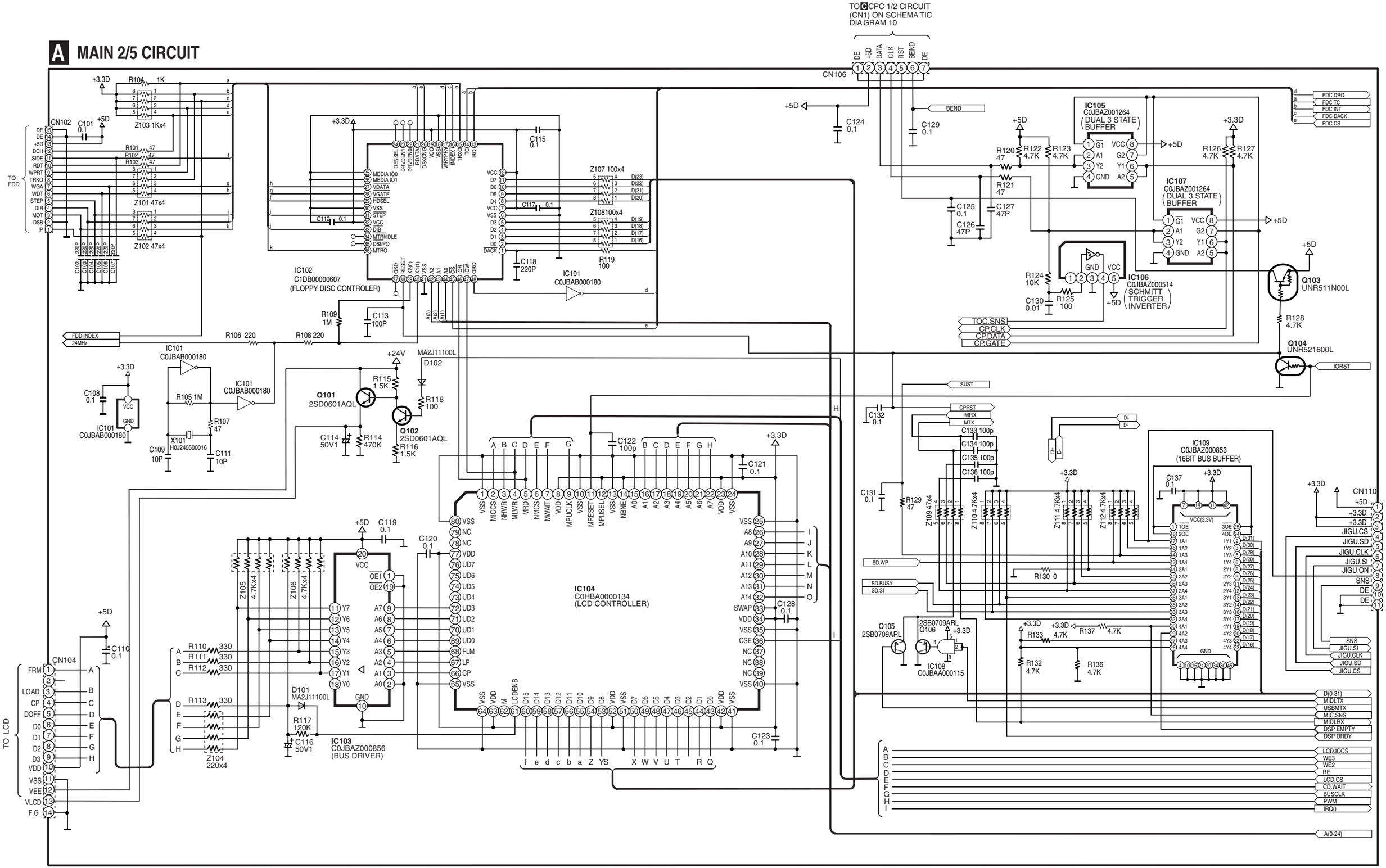
SCHEMATIC DIAGRAM-2



SX-KN2400 MAIN 1/5 SCHEMATIC DIAGRAM

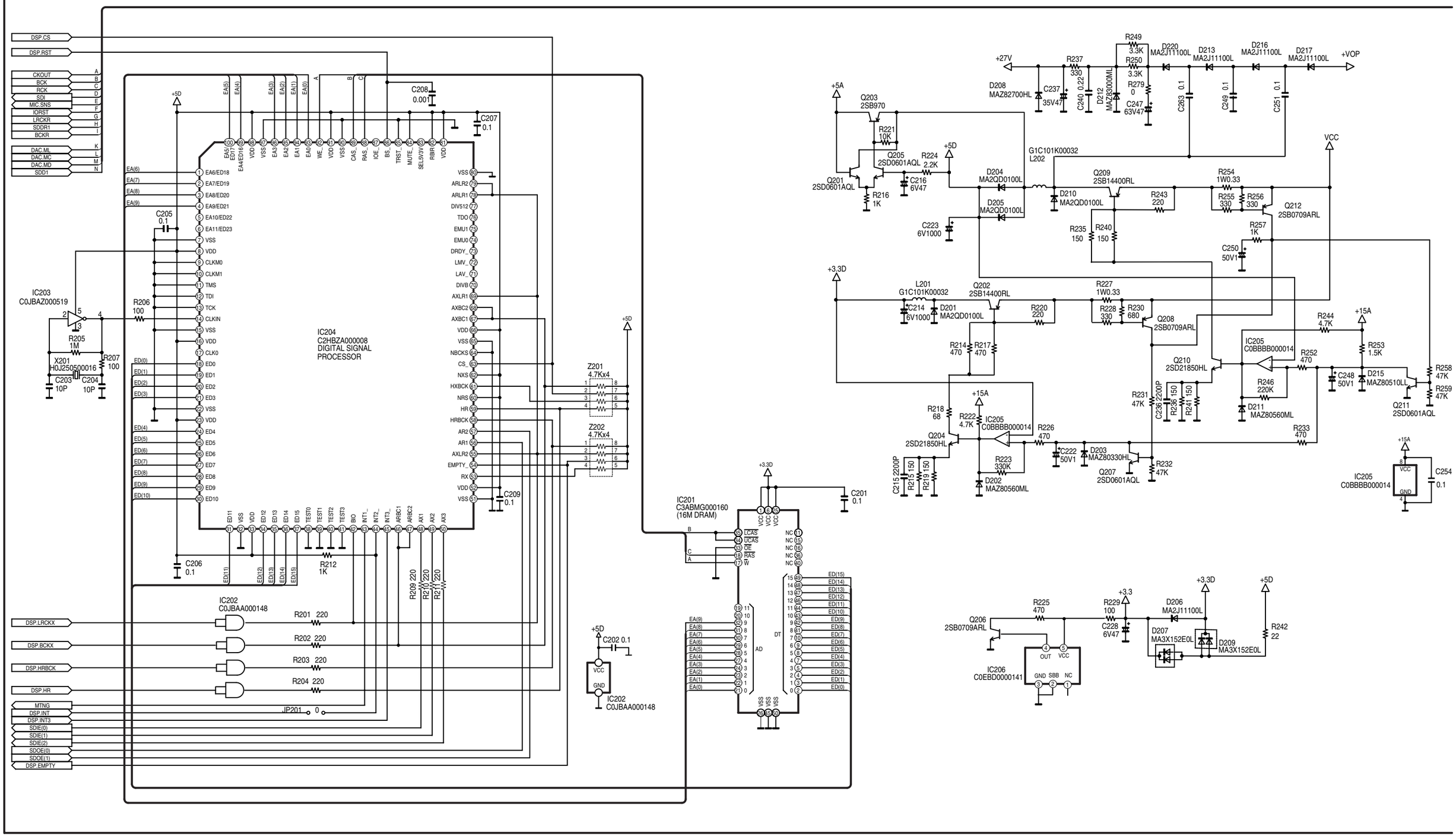
SCHEMATIC DIAGRAM-3

A MAIN 2/5 CIRCUIT

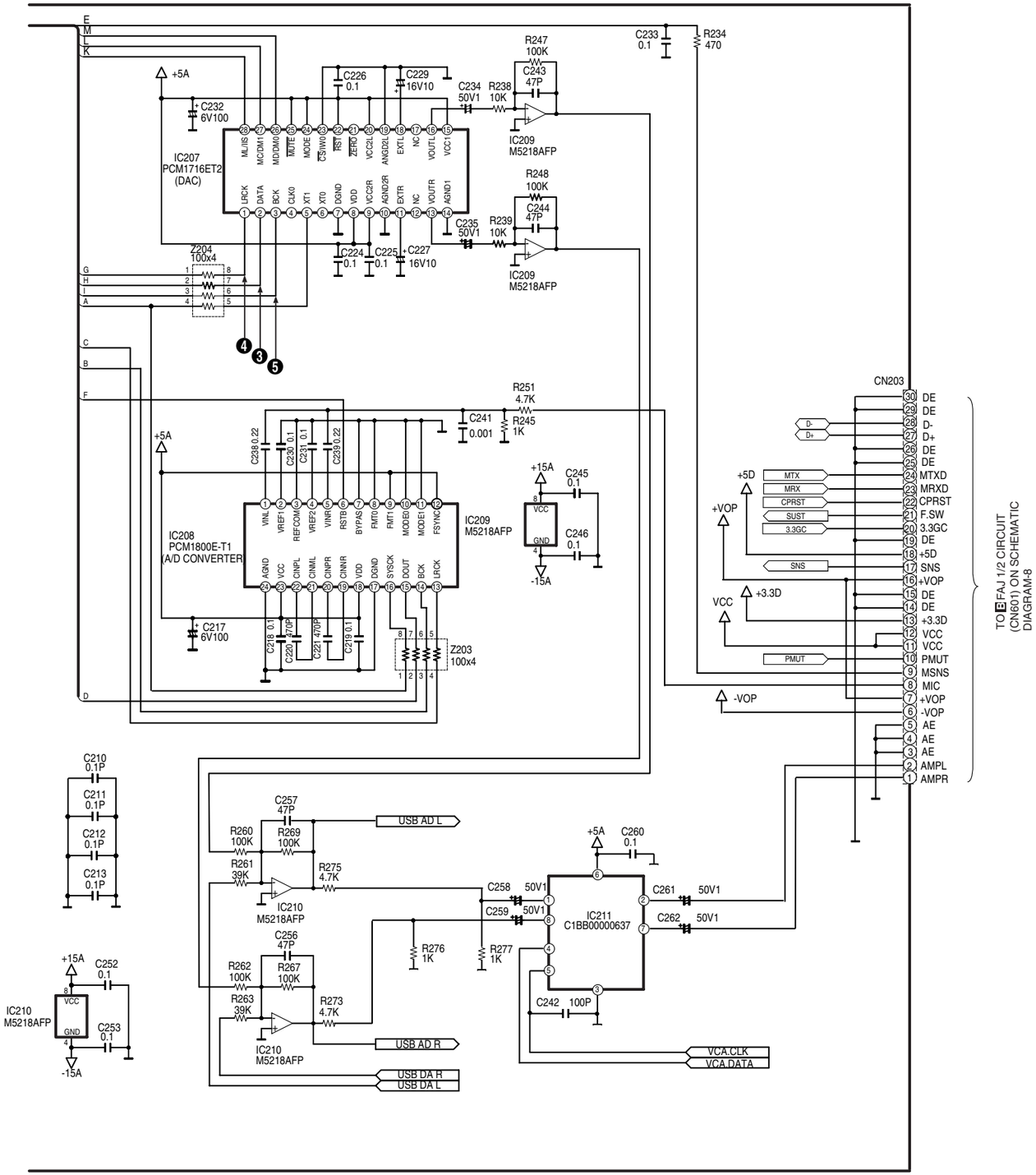


SX-KN2400 MAIN 2/5 SCHEMATIC DIAGRAM

A MAIN 3/5 CIRCUIT

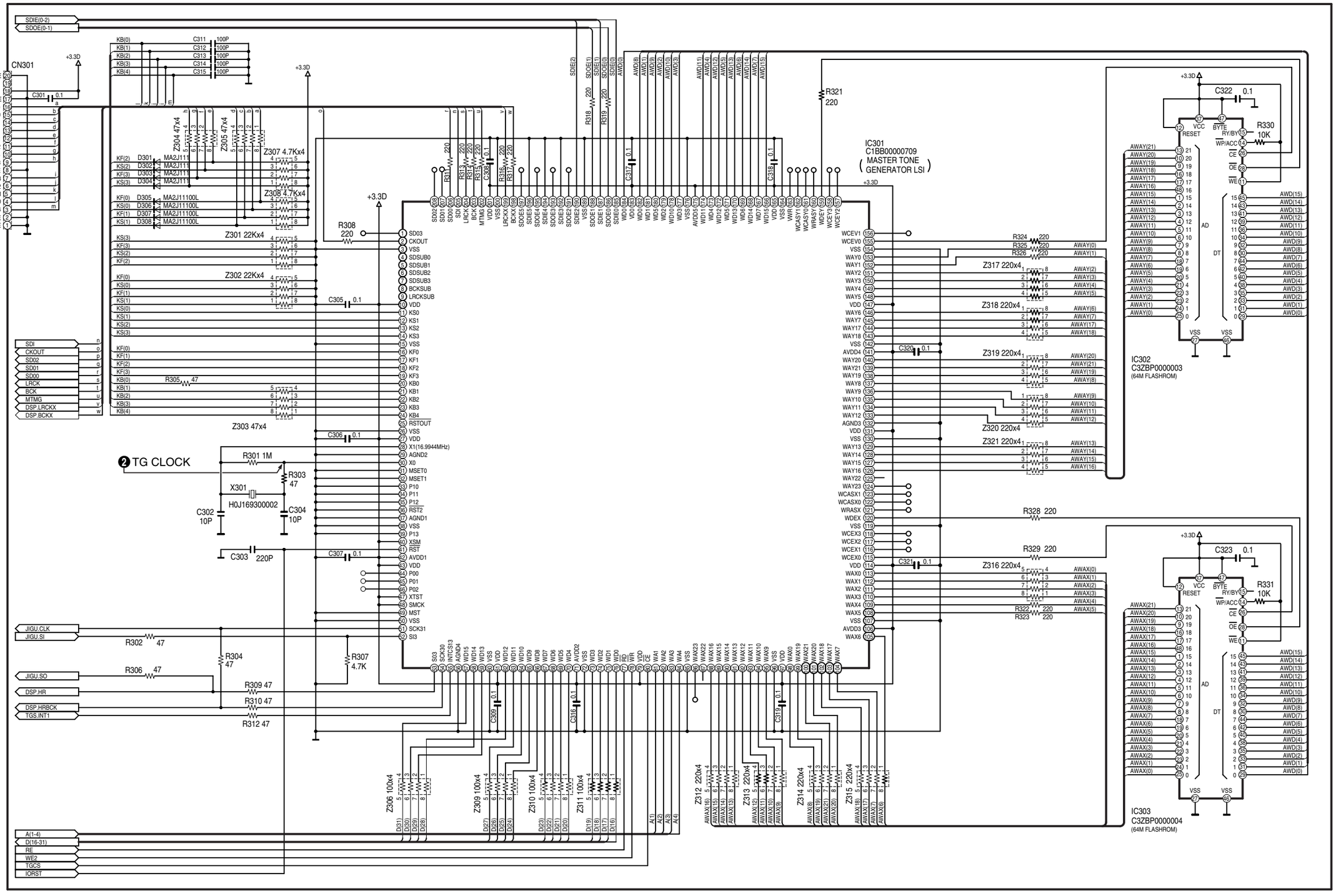


SCHEMATIC DIAGRAM-5



SCHEMATIC DIAGRAM-6

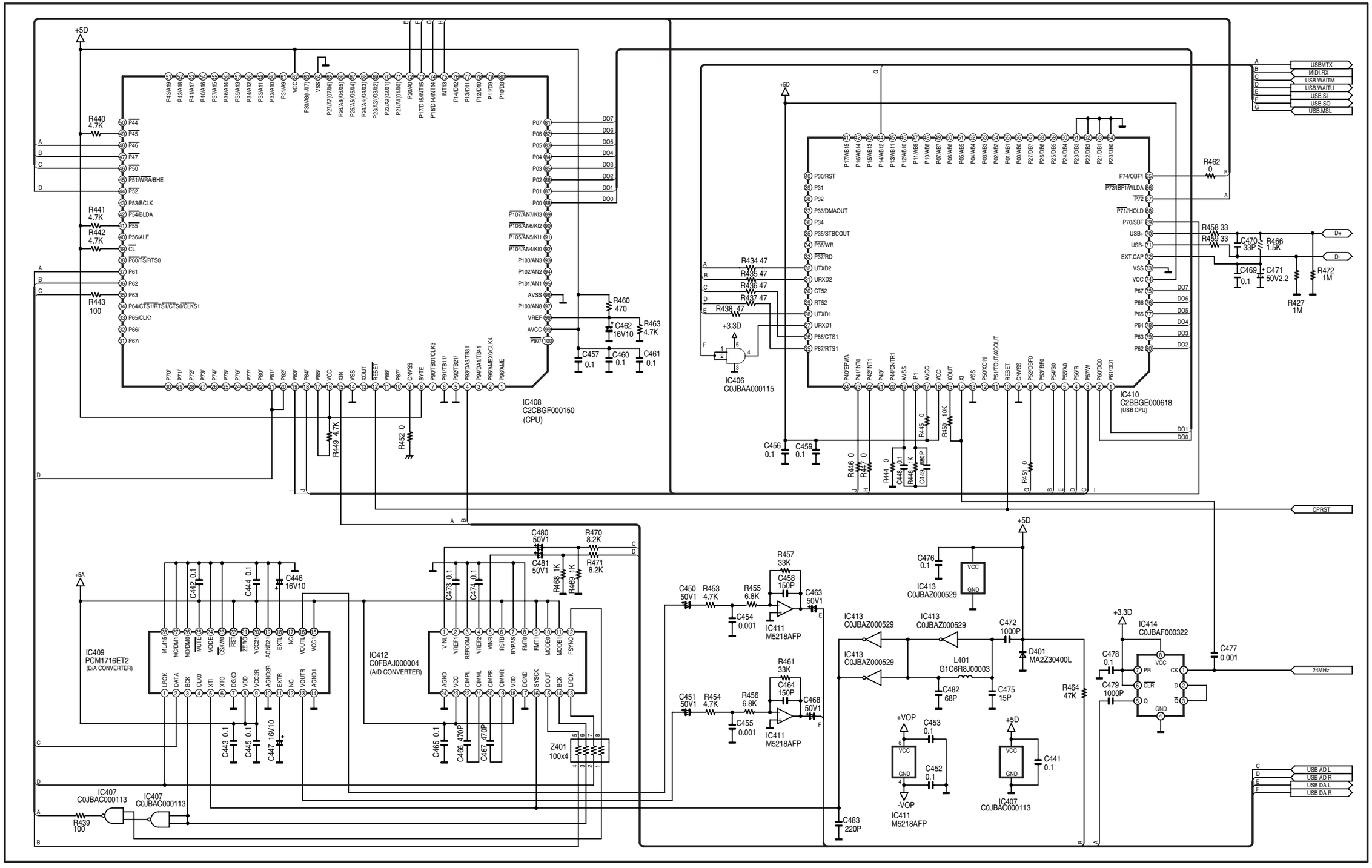
A MAIN 4/5 CIRCUIT



SX-KN2400 MAIN 4/5 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM-7

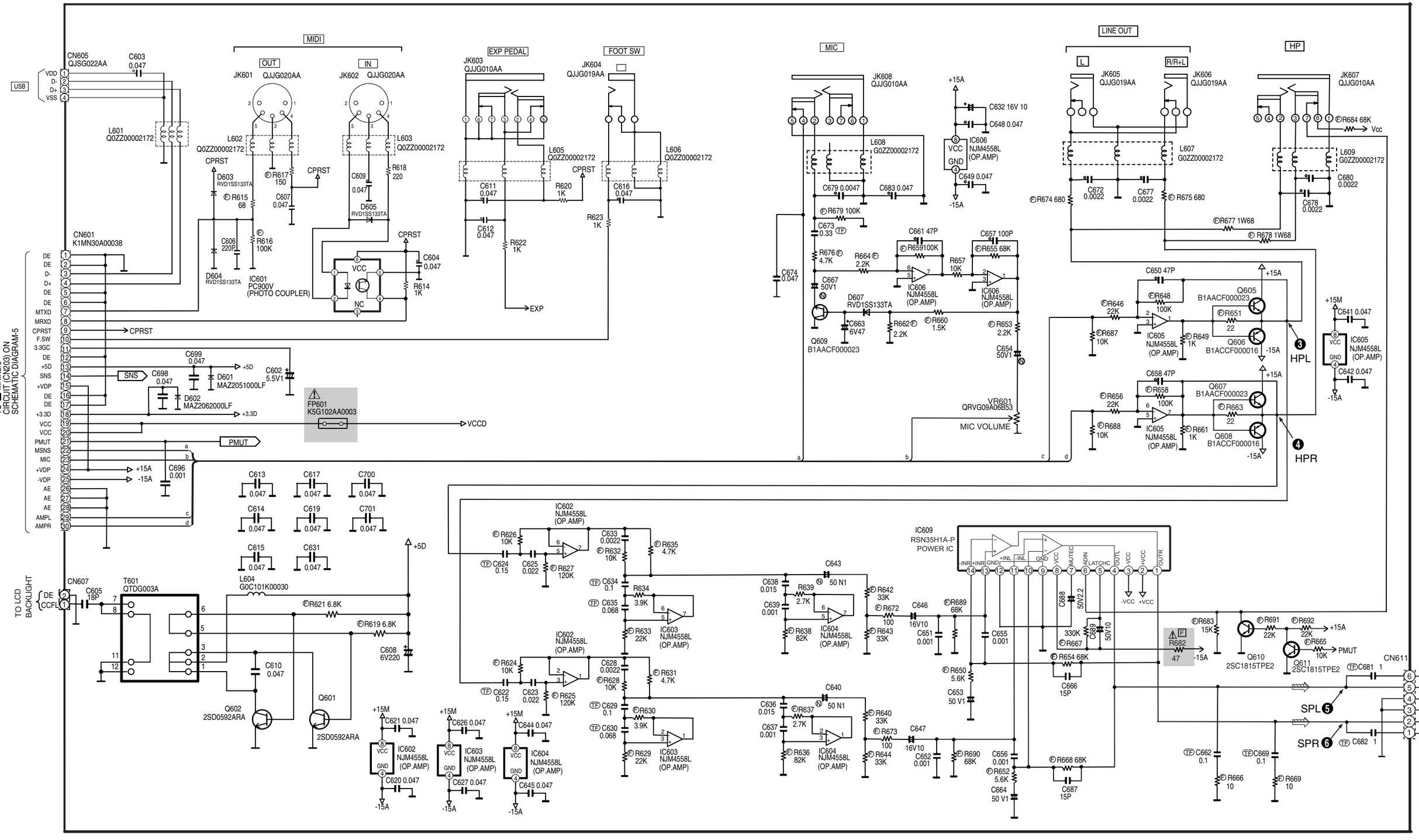
A MAIN 5/5 CIRCUIT



SX-KN2400 MAIN 5/5 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM-8

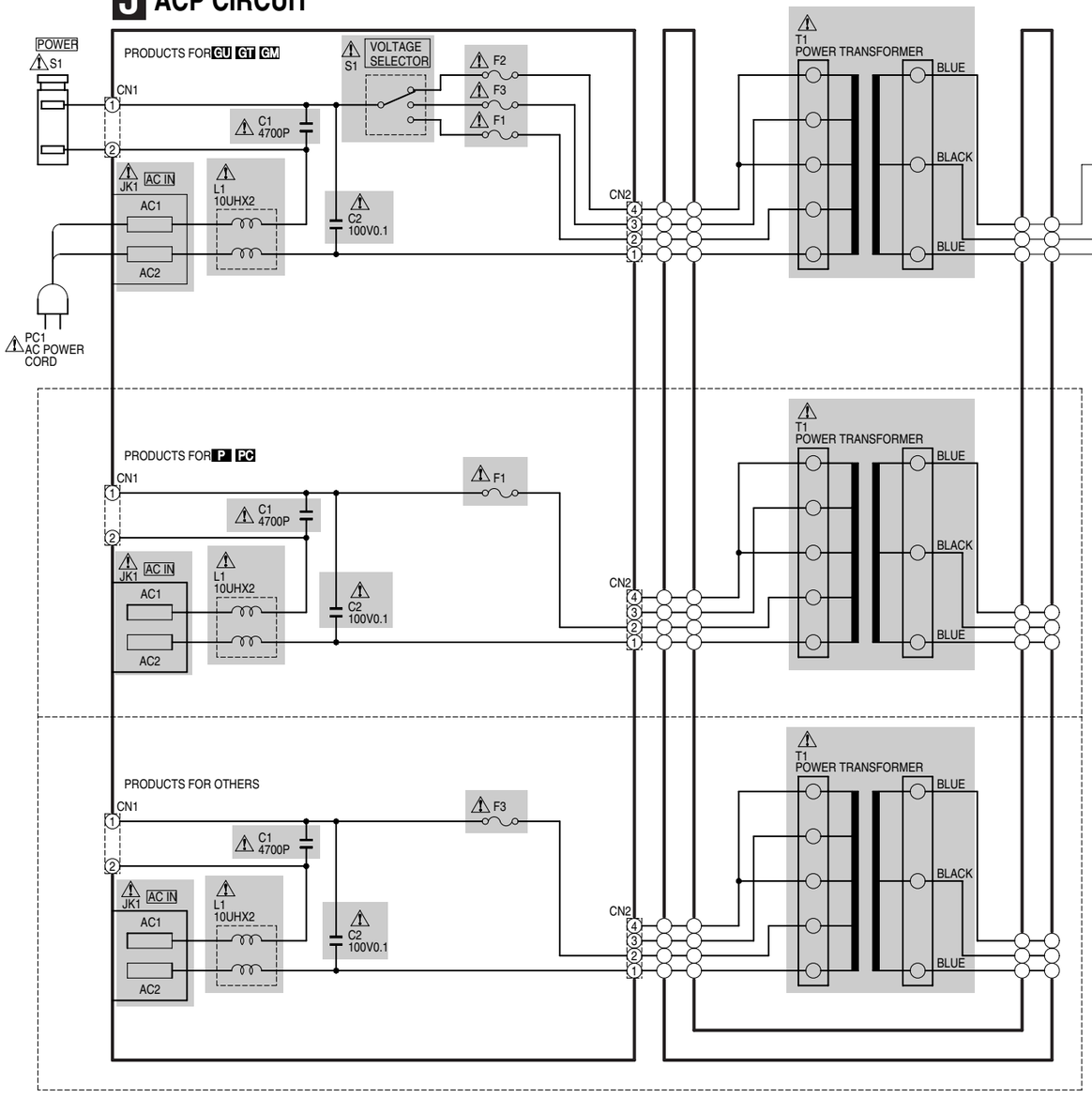
B FAJ 1/2 CIRCUIT



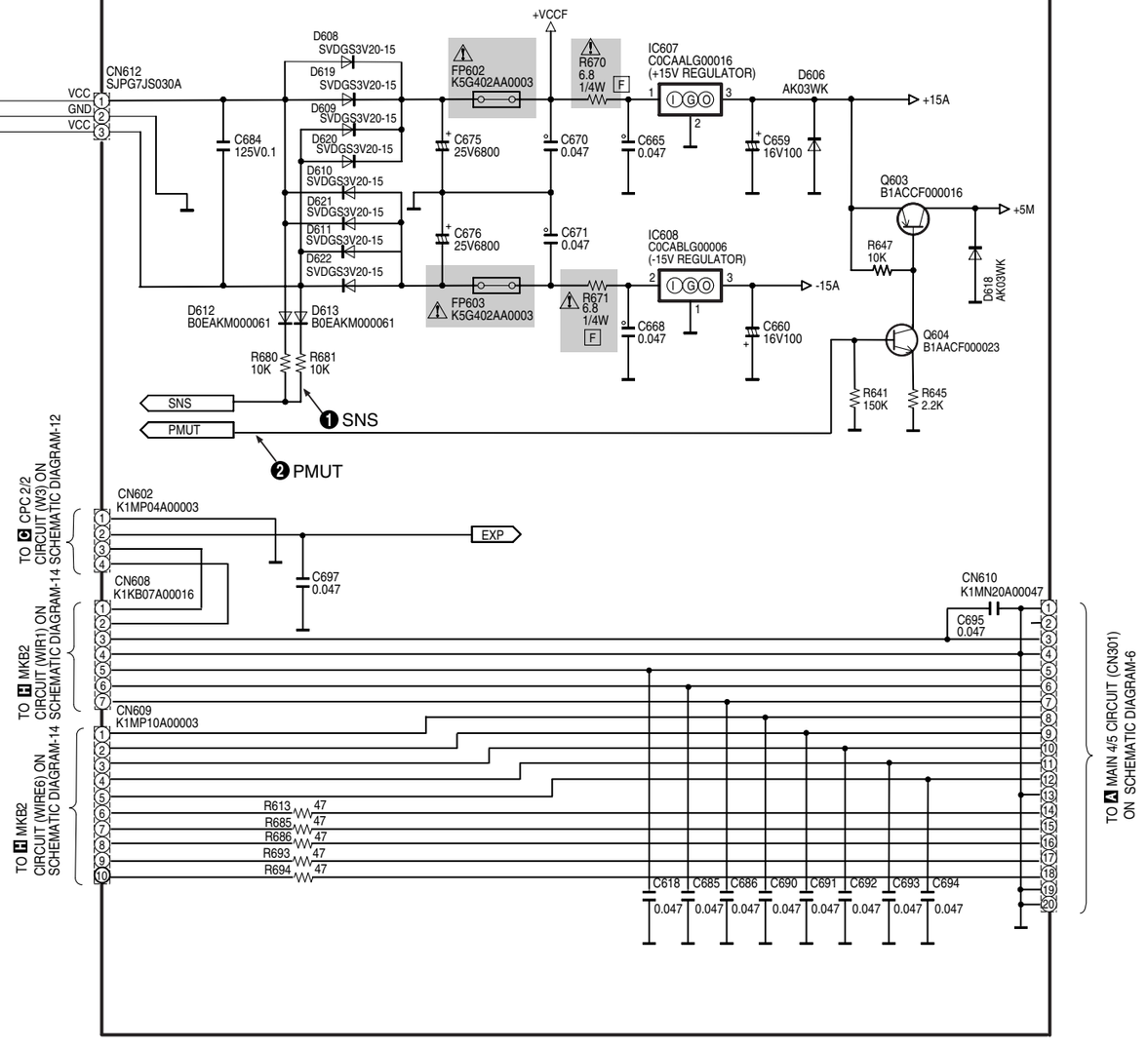
SX-KN2400 FAJ 1/2 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM- 9

J ACP CIRCUIT

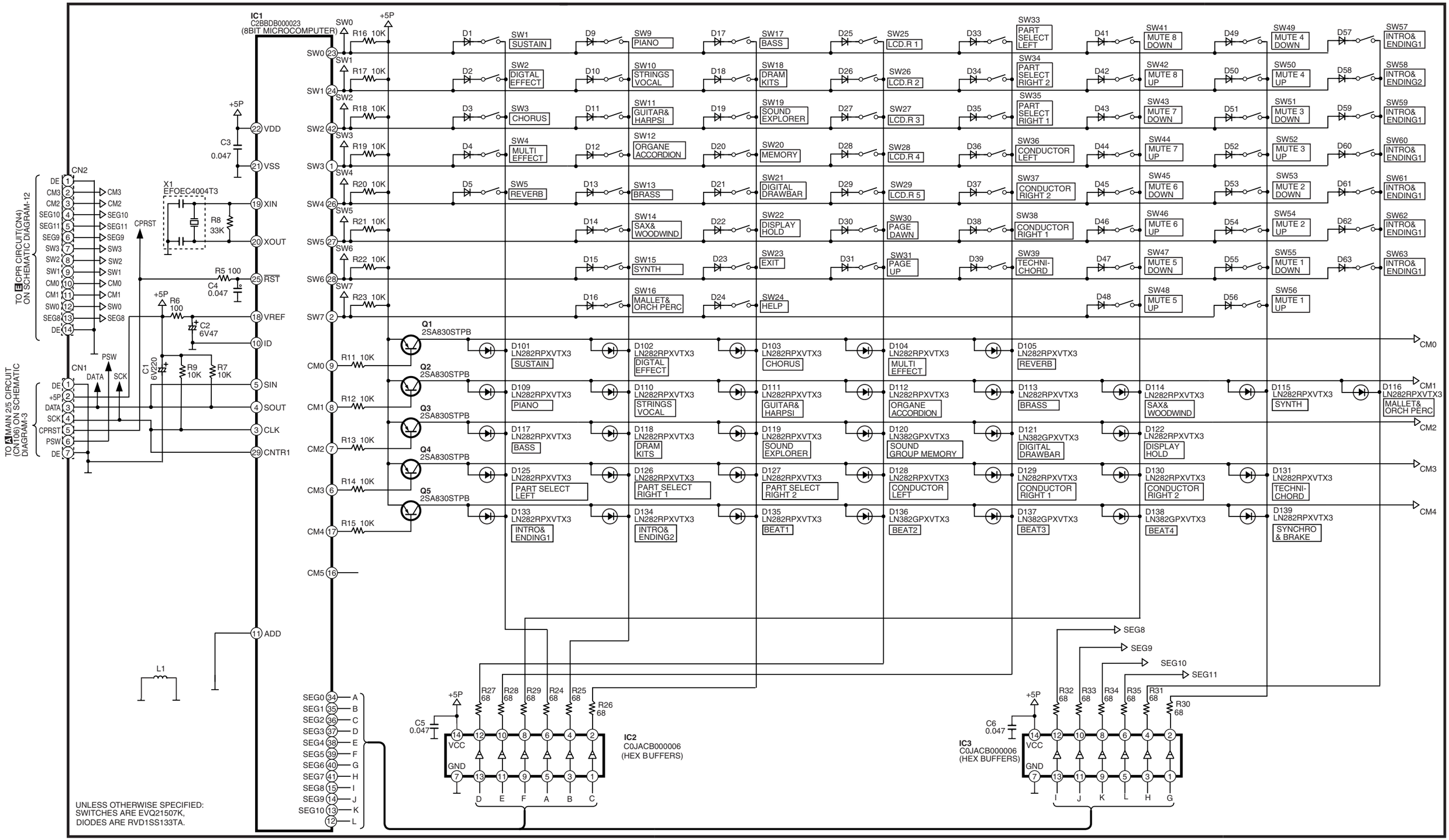


B FAJ 2/2 CIRCUIT



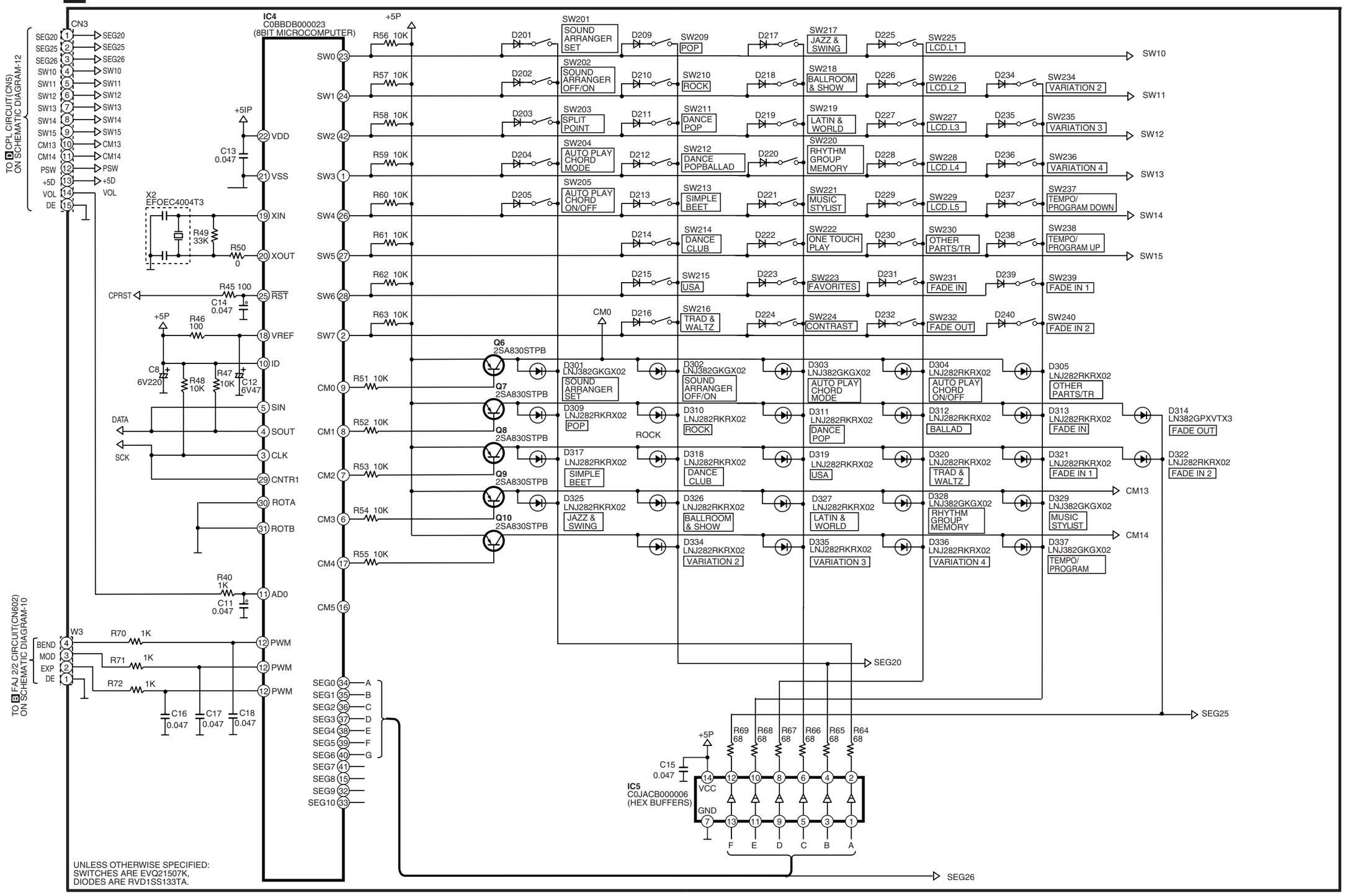
SCHEMATIC DIAGRAM-10

C CPC 1/2 CIRCUIT



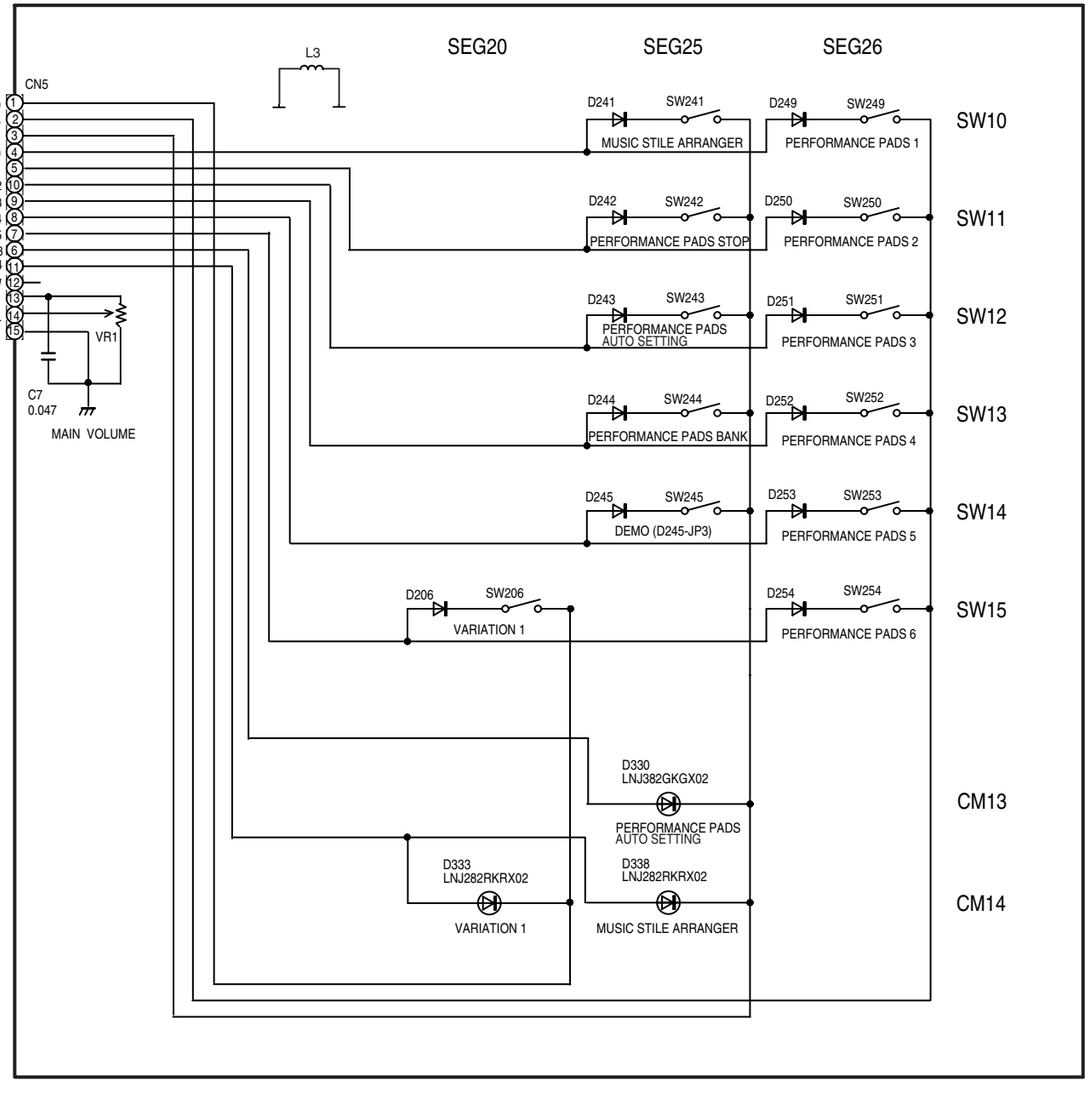
SCHEMATIC DIAGRAM-11

C CPC 2/2 CIRCUIT

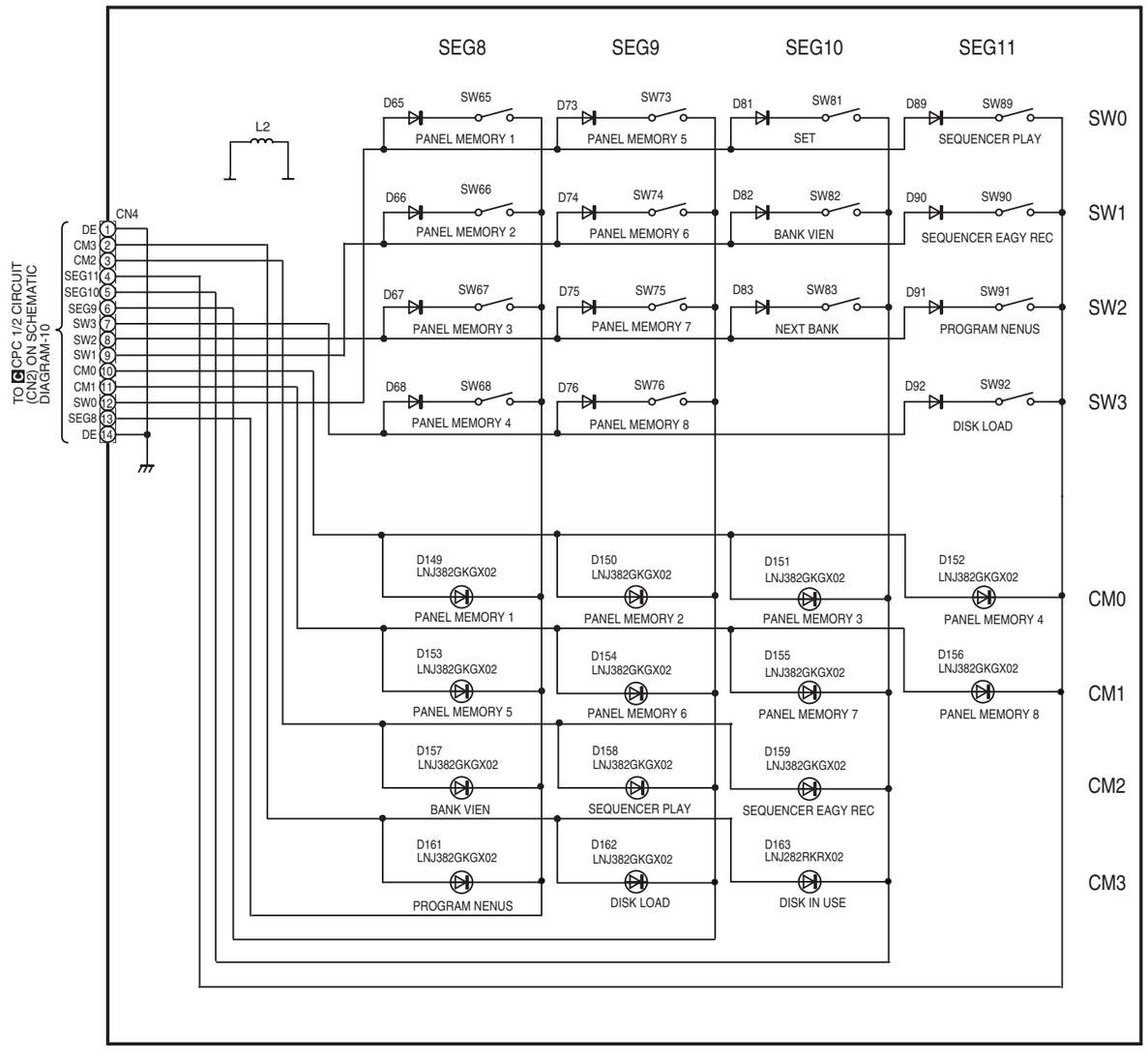


SCHEMATIC DIAGRAM-12

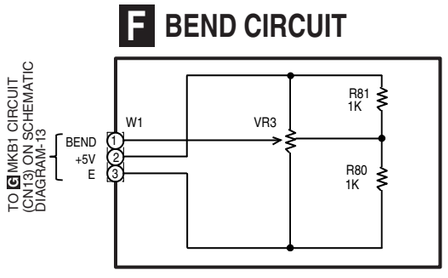
D CPL CIRCUIT



E CPR CIRCUIT



F BEND CIRCUIT

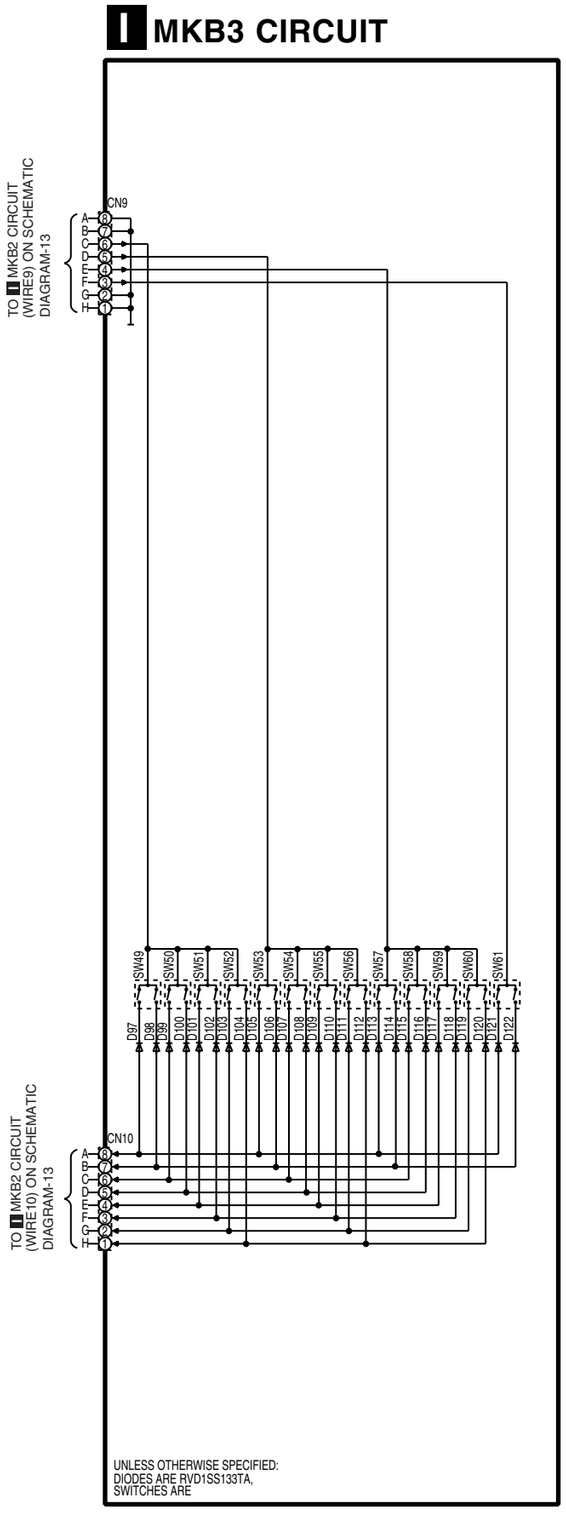


G MKB1 CIRCUIT

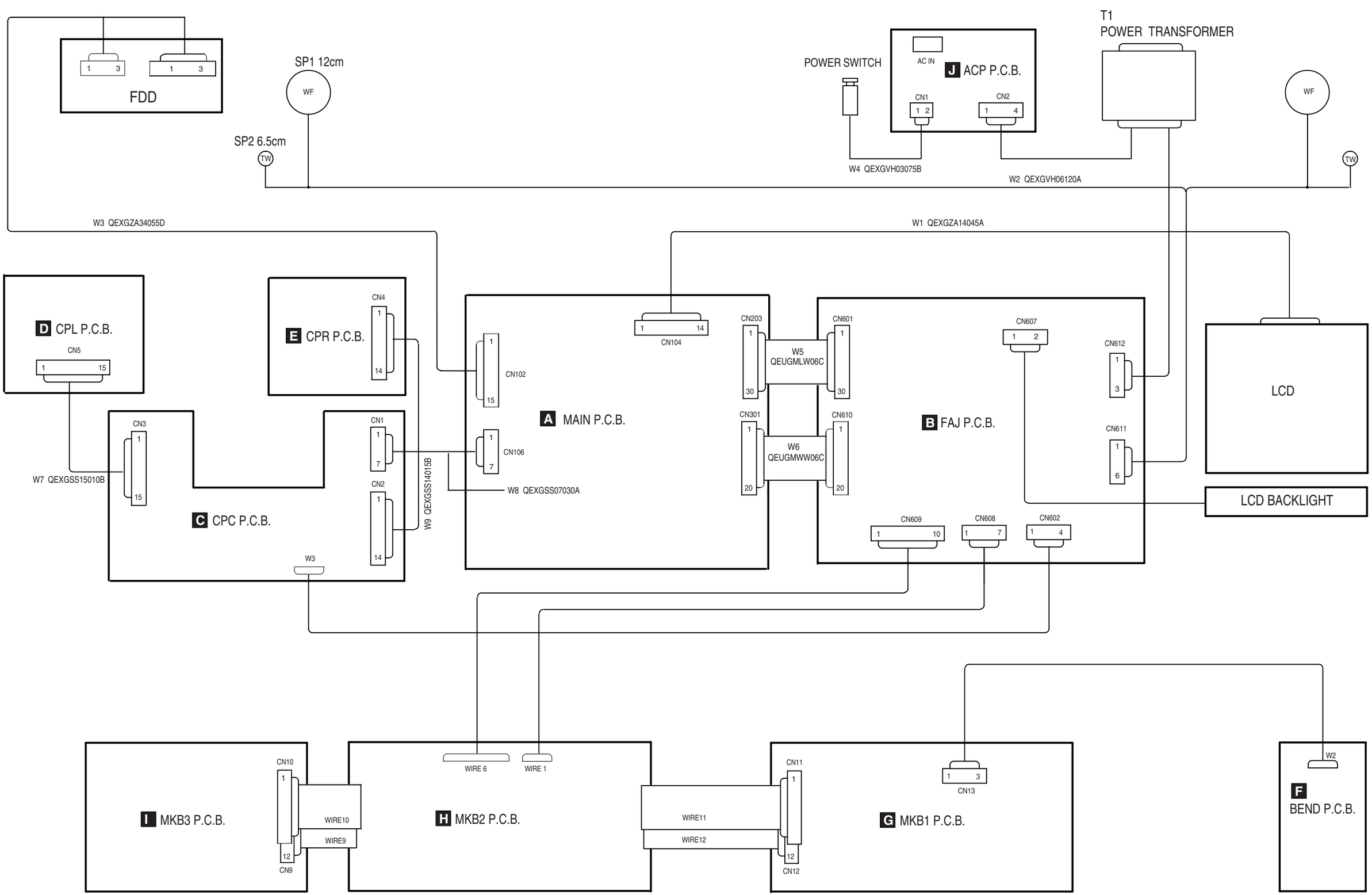
H MKB2 CIRCUIT

SX-KN2400 MKB1/MKB2 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM-14


MKB3 CIRCUIT
TO MKB2 CIRCUIT (WIRE9) ON SCHEMATIC DIAGRAM-13
CN9
TO MKB2 CIRCUIT (WIRE10) ON SCHEMATIC DIAGRAM-13
CN10
SW49 SW50 SW51 SW52 SW53 SW54 SW55 SW56 SW57 SW58 SW59 SW60 SW61
D97 D98 D99 D100 D101 D102 D103 D104 D105 D106 D107 D108 D109 D110 D111 D112 D113 D114 D115 D116 D117 D118 D119 D120 D121 D122
UNLESS OTHERWISE SPECIFIED:
DIODES ARE RVD1SS133TA,
SWITCHES ARE

SX-KN2400 MKB3 SCHEMATIC DIAGRAM


FDD
1 3
1 3
SP1 12cm
WF
SP2 6.5cm
TW
POWER SWITCH
AC IN
J ACP P.C.B.
CN1
1 2
CN2
1 4
W4 QEXGVH03075B
T1
POWER TRANSFORMER
WF
TW
W2 QEXGVH06120A
W3 QEXGZA34055D
W1 QEXGZA14045A
D CPL P.C.B.
CN5
1 15
E CPR P.C.B.
CN4
1
14
CN104
1 14
CN102
1
15
A MAIN P.C.B.
CN106
1
7
W8 QEXGSS07030A
CN203
1
30
W5
QEUGMLW06C
CN601
1
30
CN301
1
20
W6
QEUGMWW06C
CN610
1
20
B FAJ P.C.B.
CN607
1 2
CN612
1
3
CN611
1
6
LCD
LCD BACKLIGHT
CN609
1 10
CN608
1 7
CN602
1 4
W7 QEXGSS15010B
CN3
1
15
C CPC P.C.B.
CN1
1
7
CN2
1
14
W9 QEXGSS14015B
W3
WIRE 6
WIRE 1
I MKB3 P.C.B.
CN10
1
12
CN9
WIRE10
WIRE9
H MKB2 P.C.B.
WIRE11
WIRE12
CN11
1
12
CN12
G MKB1 P.C.B.
CN13
1 3
W2
F
BEND P.C.B.

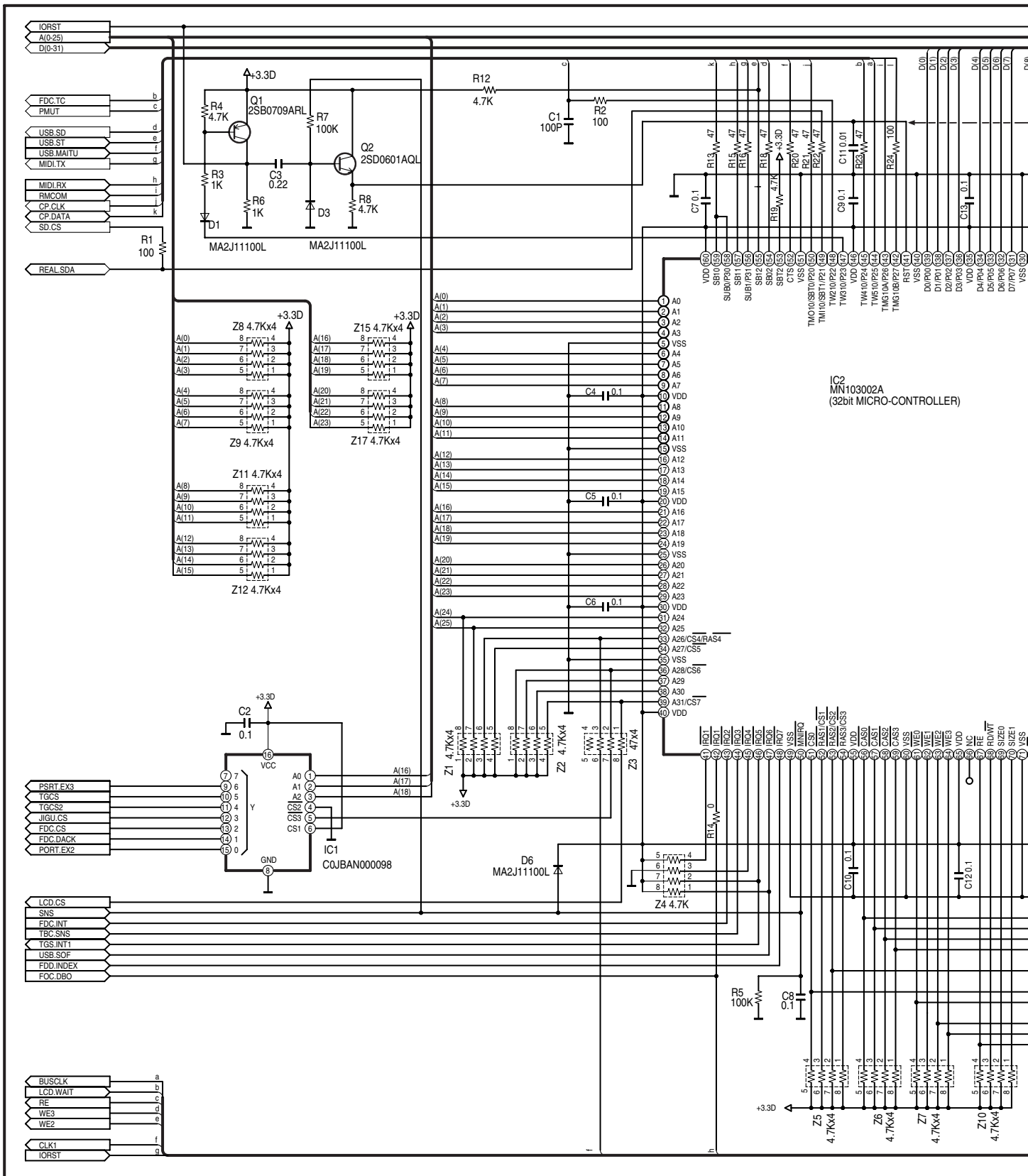
Keyboard [SX-KN2400]

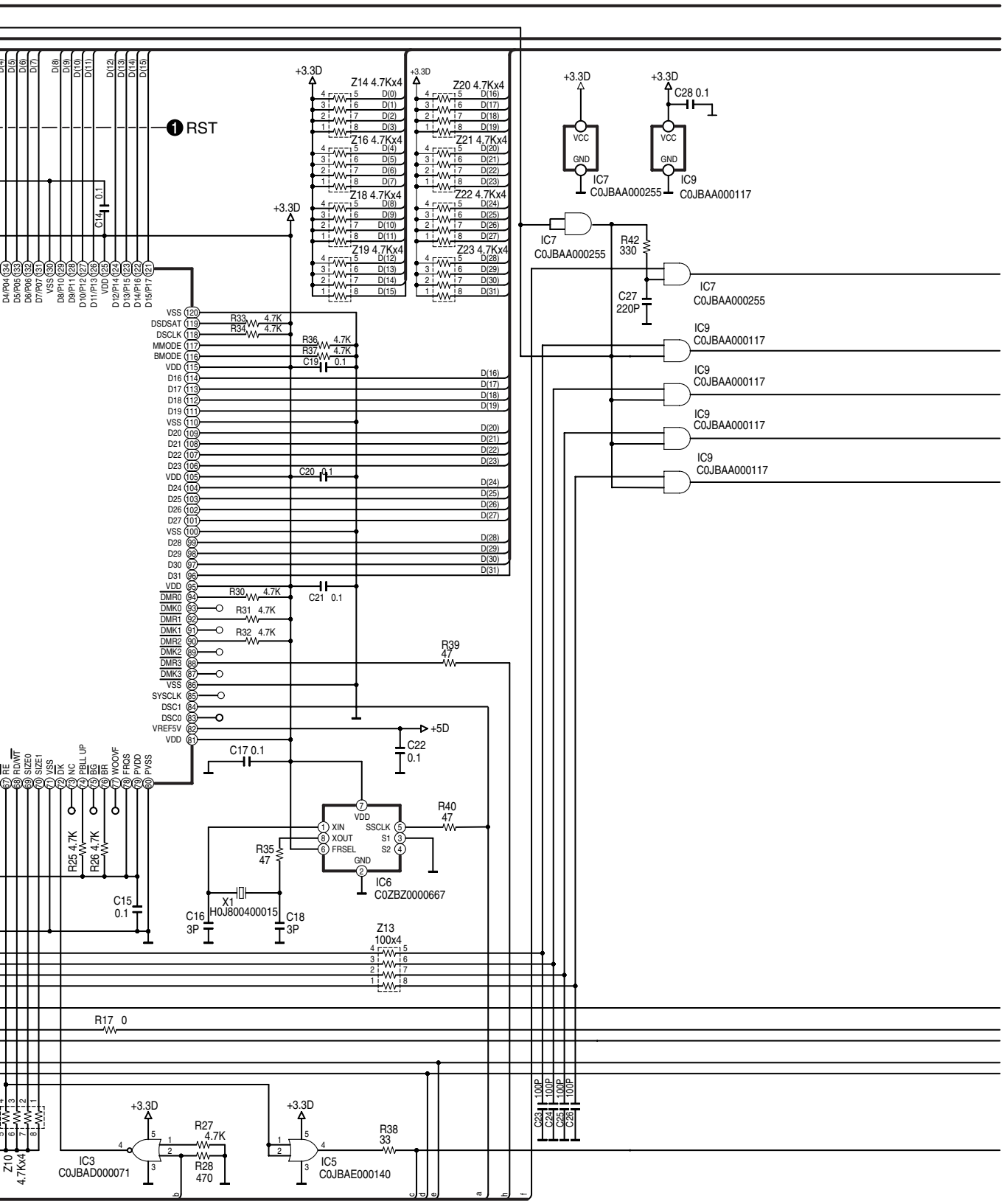
Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1-16	1-16	Assigned to the part.
	Changed	1-16	1-16	
Mode	Default	3	Mode 3	OMNI OFF, POLY MODE
	Messages	Mode 3, 4 (M=1)	Mode 3, 4 (M=1)	* M=1 only
	Altered	—	—	
Note Number		0-127	0-127	
	True voice	—	0-127	
Velocity	Note ON	○	○	
	Note OFF	×	×	
After Touch	Key's	×	×	
	Ch's	○ × *	○ × *	
Pitch Bend		○ × *	○ × *	
Control Change	0,32	○ × *	○ × *	Bank Select MSB, LSB
	1	○ × *	○ × *	Modulation
	5	○	○	Portamento time
	6,38	○ × *	○ × *	Data entry MSB, LSB
	7	○ × *	○ × *	Volume
	10	○ × *	○ × *	Panpot
	11	○ × *	○ × *	Expression
	12,13	○ × *	○ × *	Sound DSP
	64	○ × *	○ × *	Sustain
	65	○	○	Portamento on / off
	66	○	○	Sostenuto
	67	○	○	Soft Pedal
	71~78	○ × *	○ × *	Sound controllers
	80~83	○	○	Part Equalizer
	91~95	○ × *	○ × *	Effect 1~5 Depth
	98,99	○ × *	○ × *	NRPN
	100,101	○ × *	○ × *	RPN
Prog Change		○ × *	○ × *	
	True #	—	0-127	
System exclusive		○ × *	○ × *	
System common	Song Pos	○ × *	○ × *	
	Song Sel	○ × *	○ × *	
	Tune	×	×	
System Real Time	Clock	○ × *	○ × *	
	Commands	○ × *	○ × *	Start / Stop, continue
Aux Messages	Local ON / OFF	×	×	
	All notes OFF	×	○	
	Active Sense	○	○	
	Reset	×	×	
Notes		○ × * ····· Whether or not the data for each of these items is transmitted / received can be set.		

Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO ○: Yes
Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO ×: No

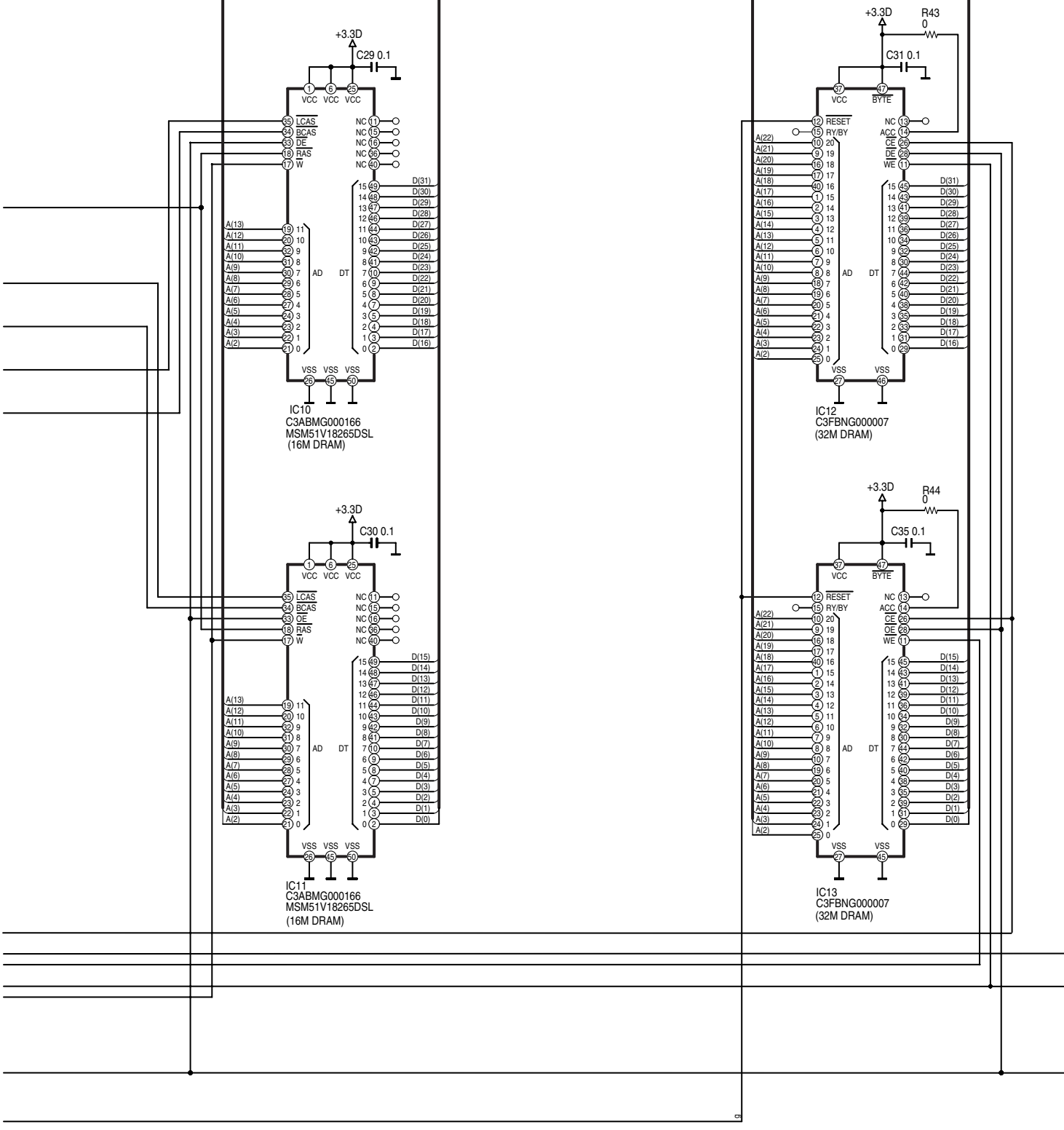
SCHEMATIC DIAGRAM-1

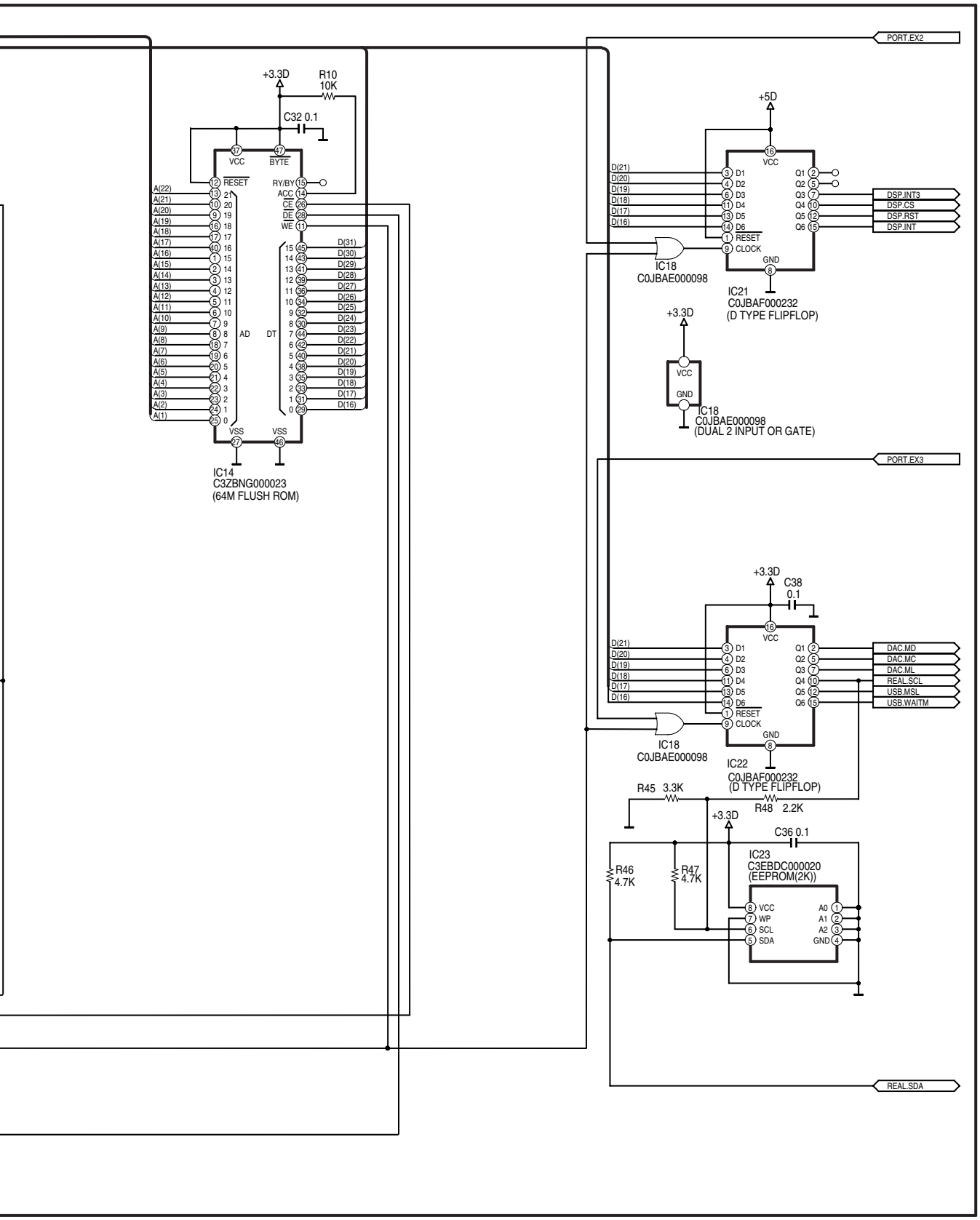
A MAIN 1/5 CIRCUIT




RST
+3.3D
Z14 4.7Kx4
Z16 4.7Kx4
Z18 4.7Kx4
Z19 4.7Kx4
Z20 4.7Kx4
Z21 4.7Kx4
Z22 4.7Kx4
Z23 4.7Kx4
C14 0.1
C19 0.1
C20 0.1
C21 0.1
C28 0.1
IC7
C0JBAA000255
IC9
C0JBAA000117
R42
330
C27
220P
R33 4.7K
R34 4.7K
R36 4.7K
R37 4.7K
R30 4.7K
R31 4.7K
R32 4.7K
R39
47
+5D
C17 0.1
C22
0.1
R40
47
R35
47
IC6
C0ZBZ0000667
X1
H0J800400015
C16
3P
C18
3P
C15
0.1
R25 4.7K
R26 4.7K
Z13
100x4
R17 0
Z10
4.7Kx4
IC3
C0JBAD000071
R27
4.7K
R28
470
IC5
C0JBAE000140
R38
33
C24 100P
C25 100P
C26 100P

SCHEMATIC DIAGRAM-2

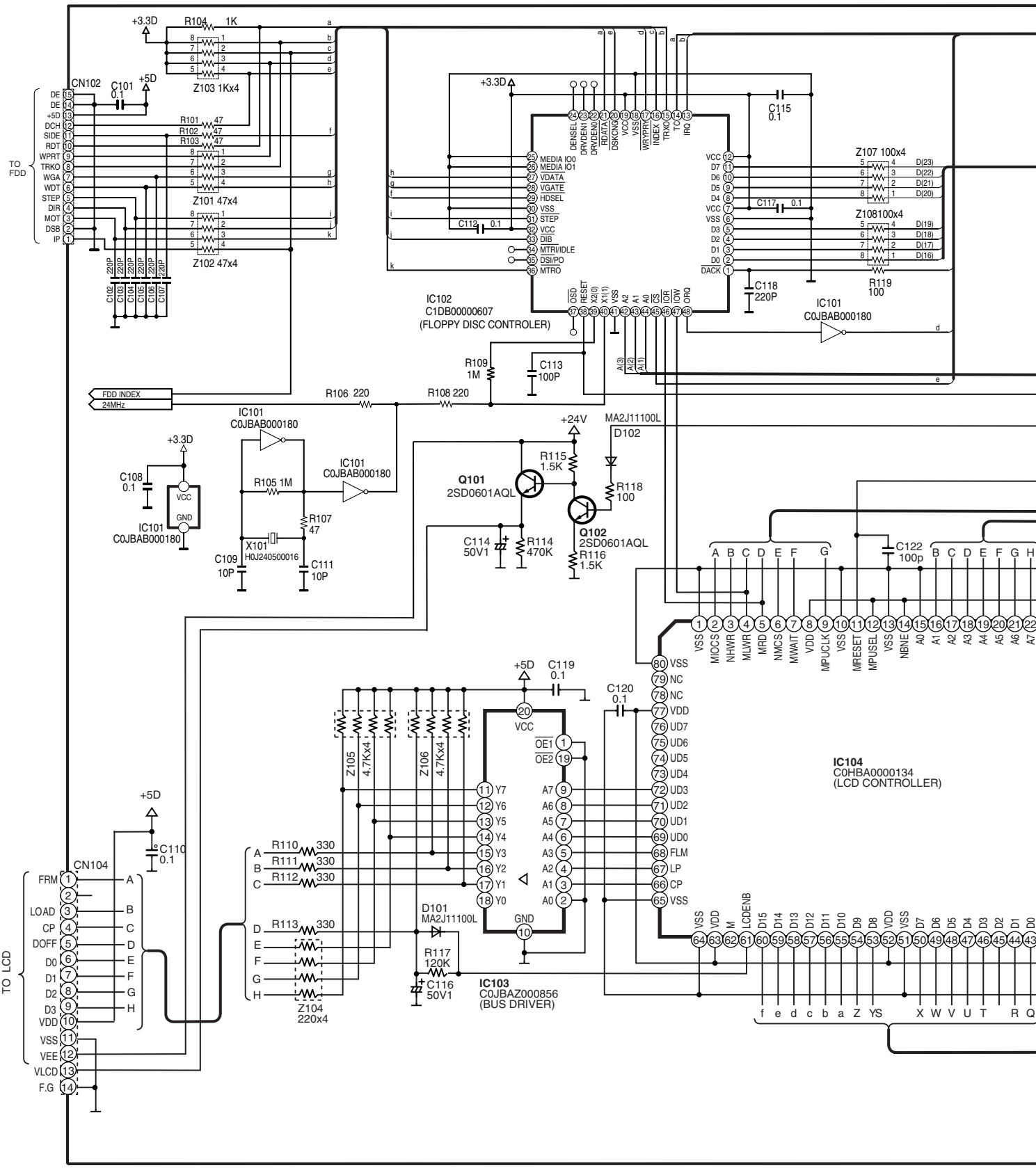


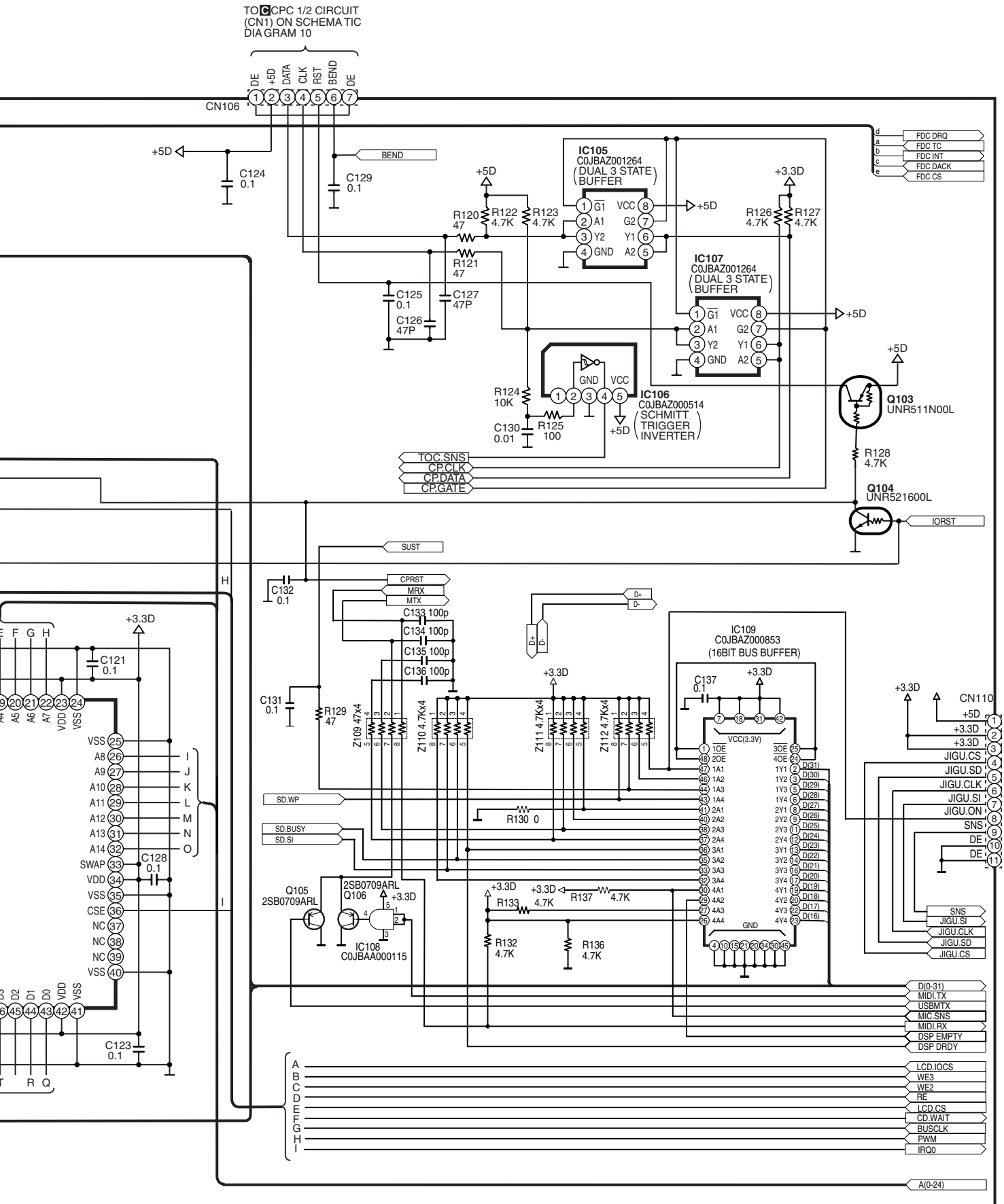


SX-KN2400 MAIN 1/5 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM-3

A MAIN 2/5 CIRCUIT

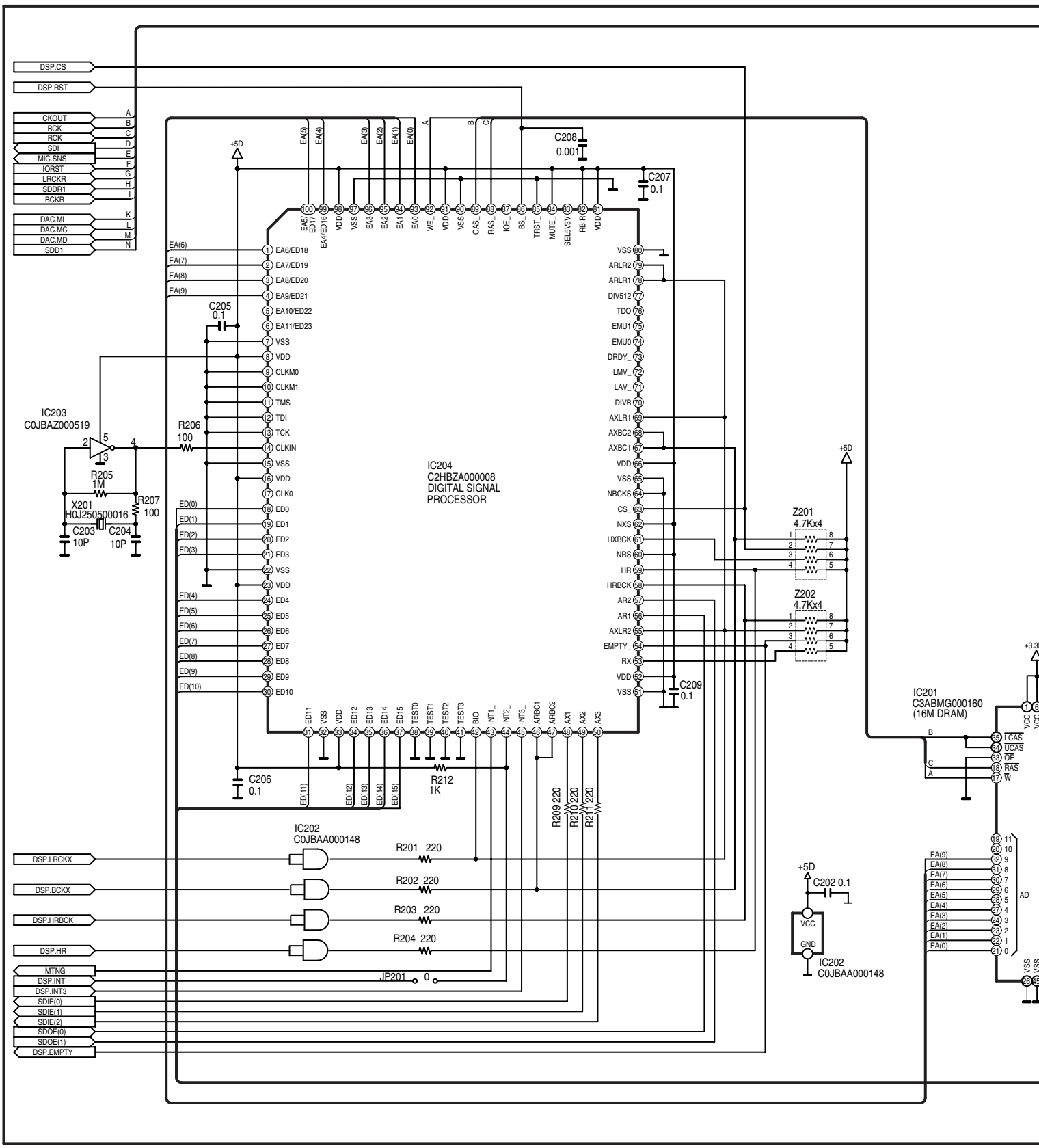


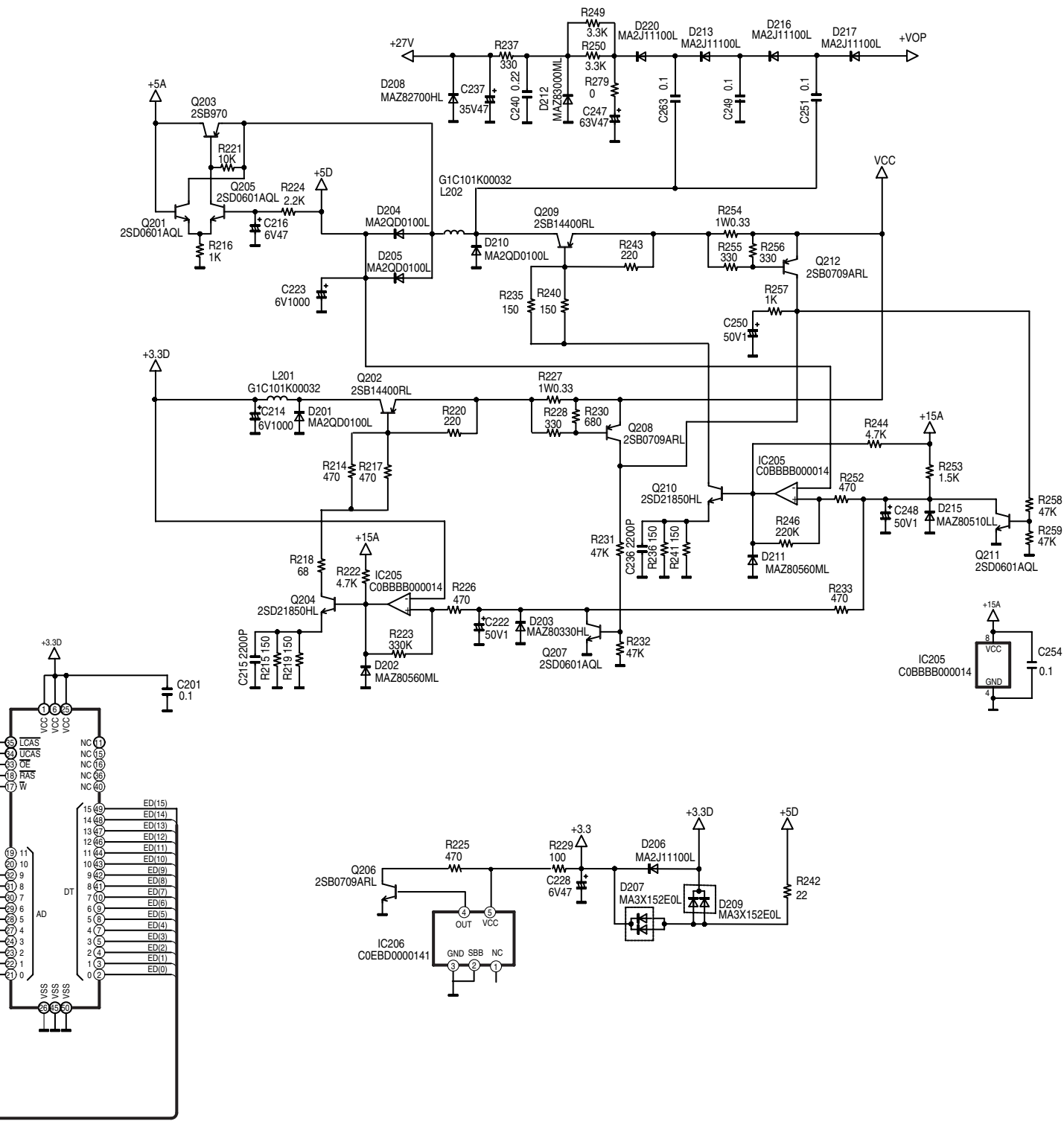


SX-KN2400 MAIN 2/5 SCHEMATIC DIAGRAM

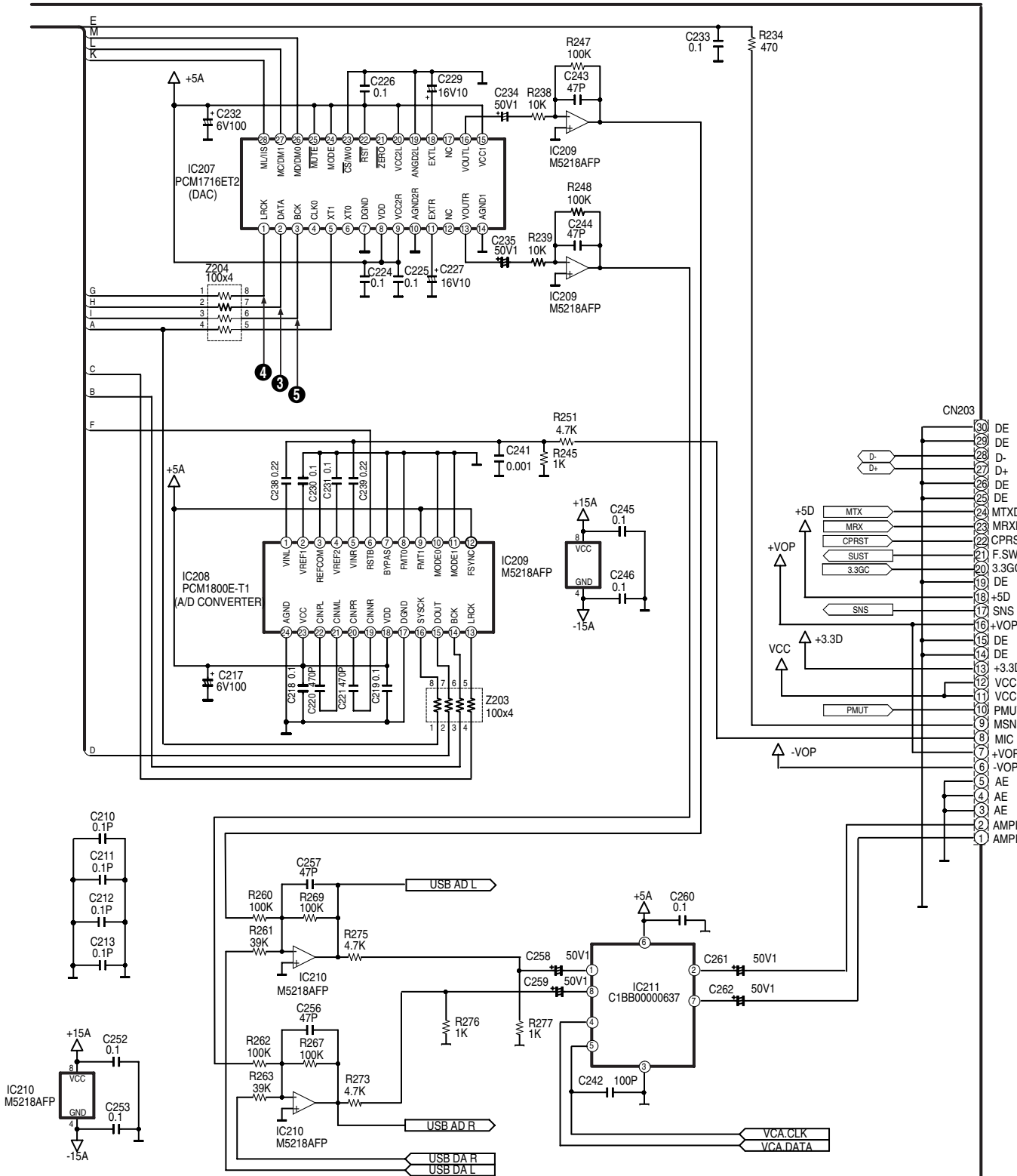
SCHEMATIC DIAGRAM-4

A MAIN 3/5 CIRCUIT




+27V
R237 330
R249 3.3K
R250 3.3K
D220 MA2J11100L
D213 MA2J11100L
D216 MA2J11100L
D217 MA2J11100L
+VOP
D208 MAZ82700HL
C237 35V47
C240 0.22
D212 MAZ83000ML
R279 0
C247 63V47
C263 0.1
C249 0.1
C251 0.1
+5A
Q203 2SB970
R221 10K
Q205 2SD0601AQL
R224 2.2K
+5D
Q201 2SD0601AQL
C216 6V47
R216 1K
G1C101K00032 L202
VCC
D204 MA2QD0100L
D205 MA2QD0100L
D210 MA2QD0100L
Q209 2SB14400RL
R243 220
R254 1W0.33
R255 330
R256 330
Q212 2SB0709ARL
C223 6V1000
R235 150
R240 150
R257 1K
C250 50V1
+3.3D
L201 G1C101K00032
Q202 2SB14400RL
R227 1W0.33
C214 6V1000
D201 MA2QD0100L
R220 220
R228 330
R230 680
Q208 2SB0709ARL
R244 4.7K
+15A
R214 470
R217 470
IC205 C0BBBB000014
R252 470
R253 1.5K
Q210 2SD21850HL
R246 220K
C248 50V1
D215 MAZ80510LL
R258 47K
R259 47K
Q211 2SD0601AQL
D211 MAZ80560ML
R231 47K
C236 2200P
R236 150
R241 150
R218 68
R222 4.7K
IC205 C0BBBB000014
R226 470
R233 470
Q204 2SD21850HL
R223 330K
C222 50V1
D203 MAZ80330HL
Q207 2SD0601AQL
R232 47K
C215 2200P
R215 150
R219 150
D202 MAZ80560ML
C201 0.1
+15A
IC205 C0BBBB000014
C254 0.1
VCC
GND
+3.3D
VCC
LCAS
UCAS
OE
RAS
W
NC
AD
DT
ED(15)
ED(14)
ED(13)
ED(12)
ED(11)
ED(10)
ED(9)
ED(8)
ED(7)
ED(6)
ED(5)
ED(4)
ED(3)
ED(2)
ED(1)
ED(0)
VSS
R225 470
Q206 2SB0709ARL
+3.3
R229 100
C228 6V47
D206 MA2J11100L
+3.3D
+5D
D207 MA3X152E0L
D209 MA3X152E0L
R242 22
IC206 C0EBD0000141
OUT
VCC
GND
SBB
NC

SCHEMATIC DIAGRAM-5



203

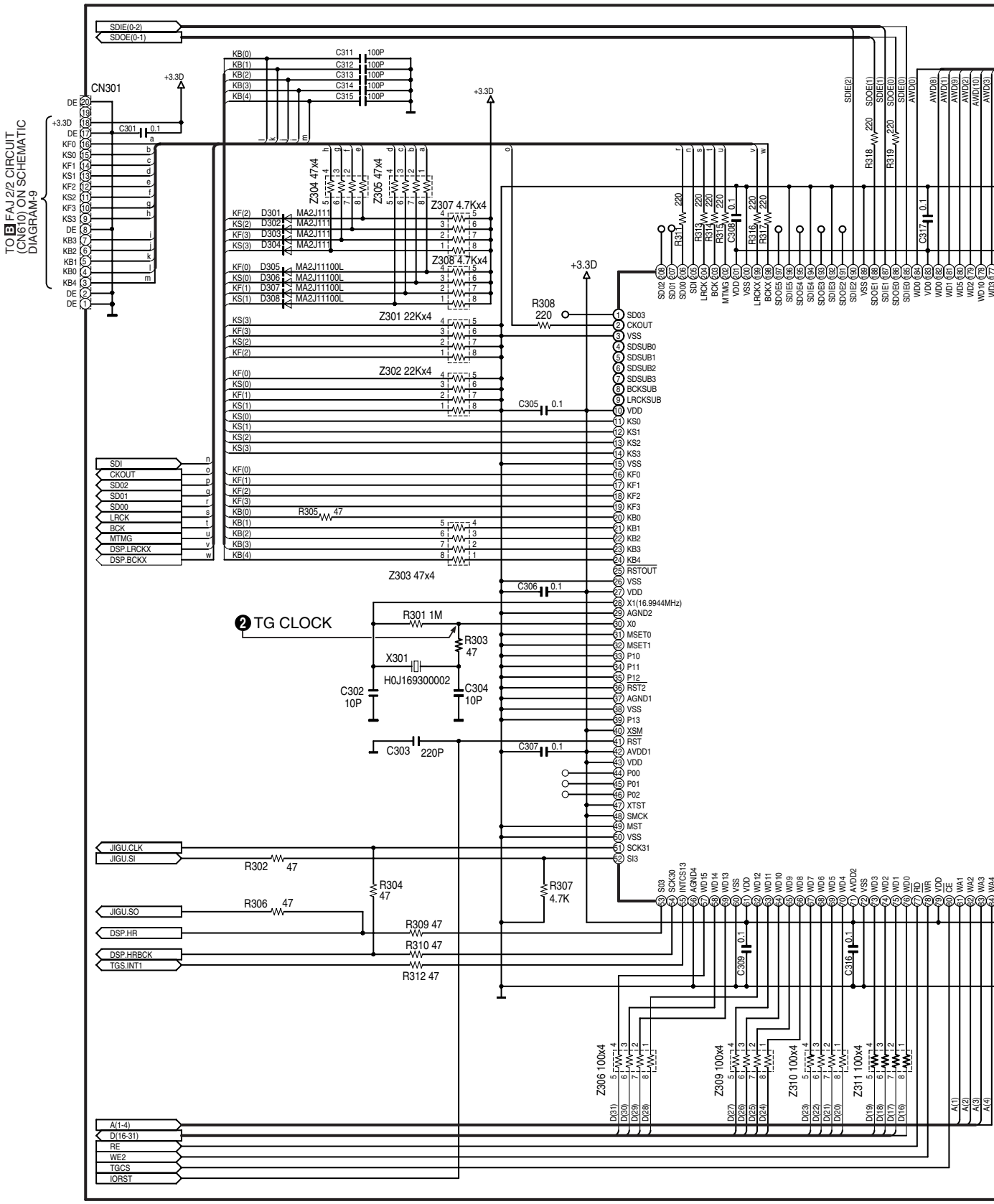
30	DE
29	DE
28	D-
27	D+
26	DE
25	DE
24	MTXD
23	MRXD
22	CPRST
21	F.SW
20	3.3GC
19	DE
18	+5D
17	SNS
16	+VOP
15	DE
14	DE
13	+3.3D
12	VCC
11	VCC
10	PMUT
9	MSNS
8	MIC
7	+VOP
6	-VOP
5	AE
4	AE
3	AE
2	AMPL
1	AMPR

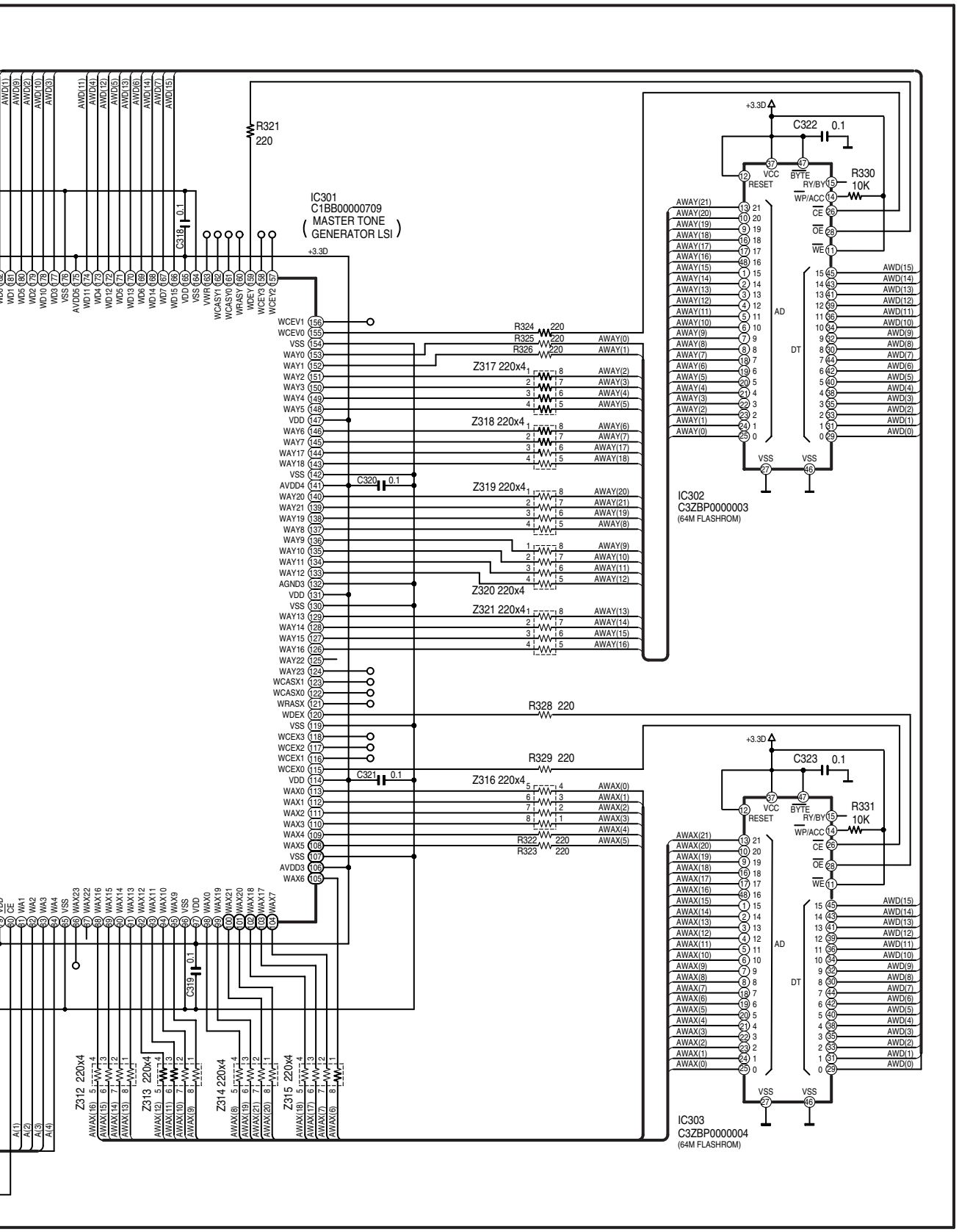
TO B FAJ 1/2 CIRCUIT
(CN601) ON SCHEMATIC
DIAGRAM-8

AM

SCHEMATIC DIAGRAM-6

A MAIN 4/5 CIRCUIT

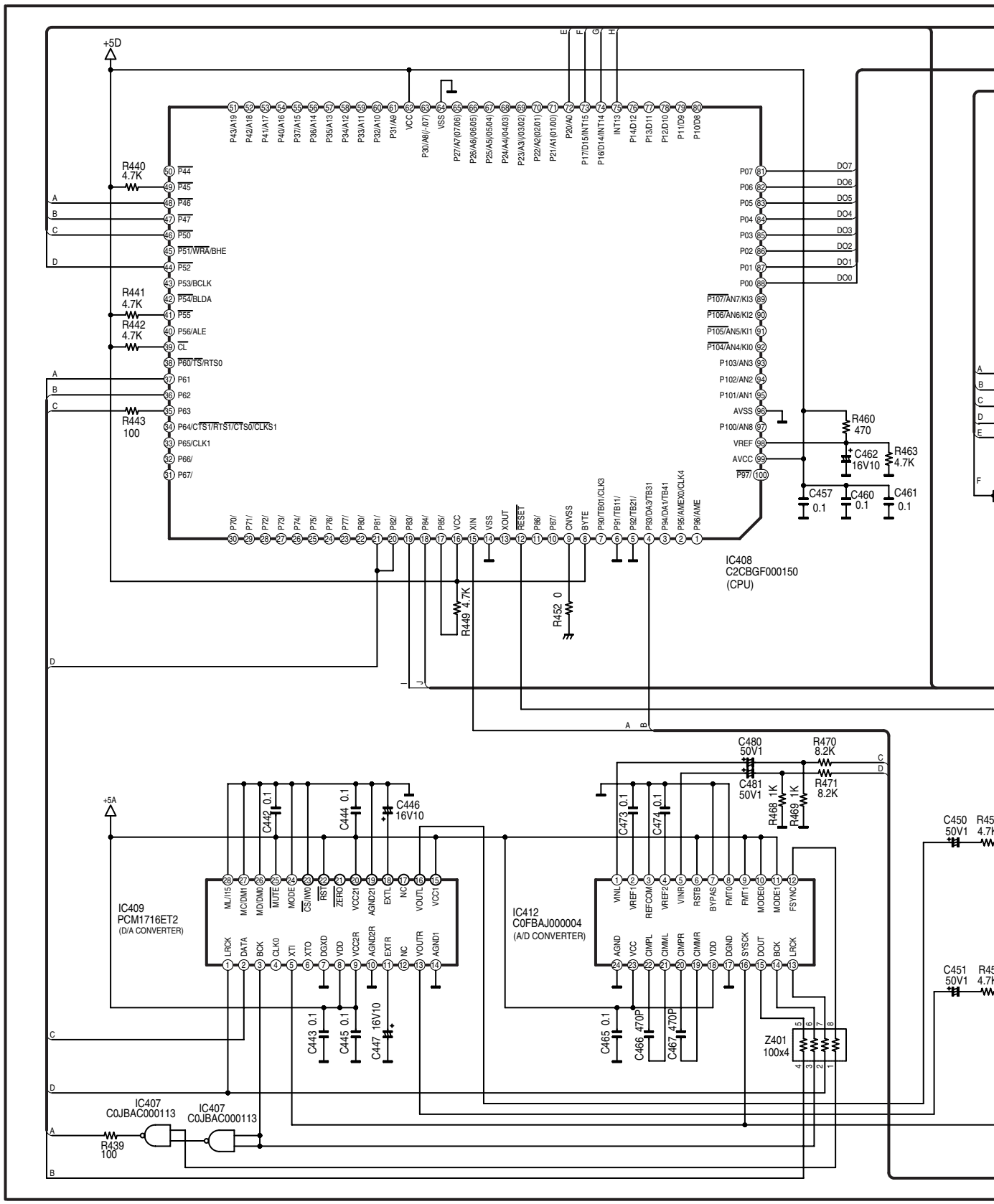


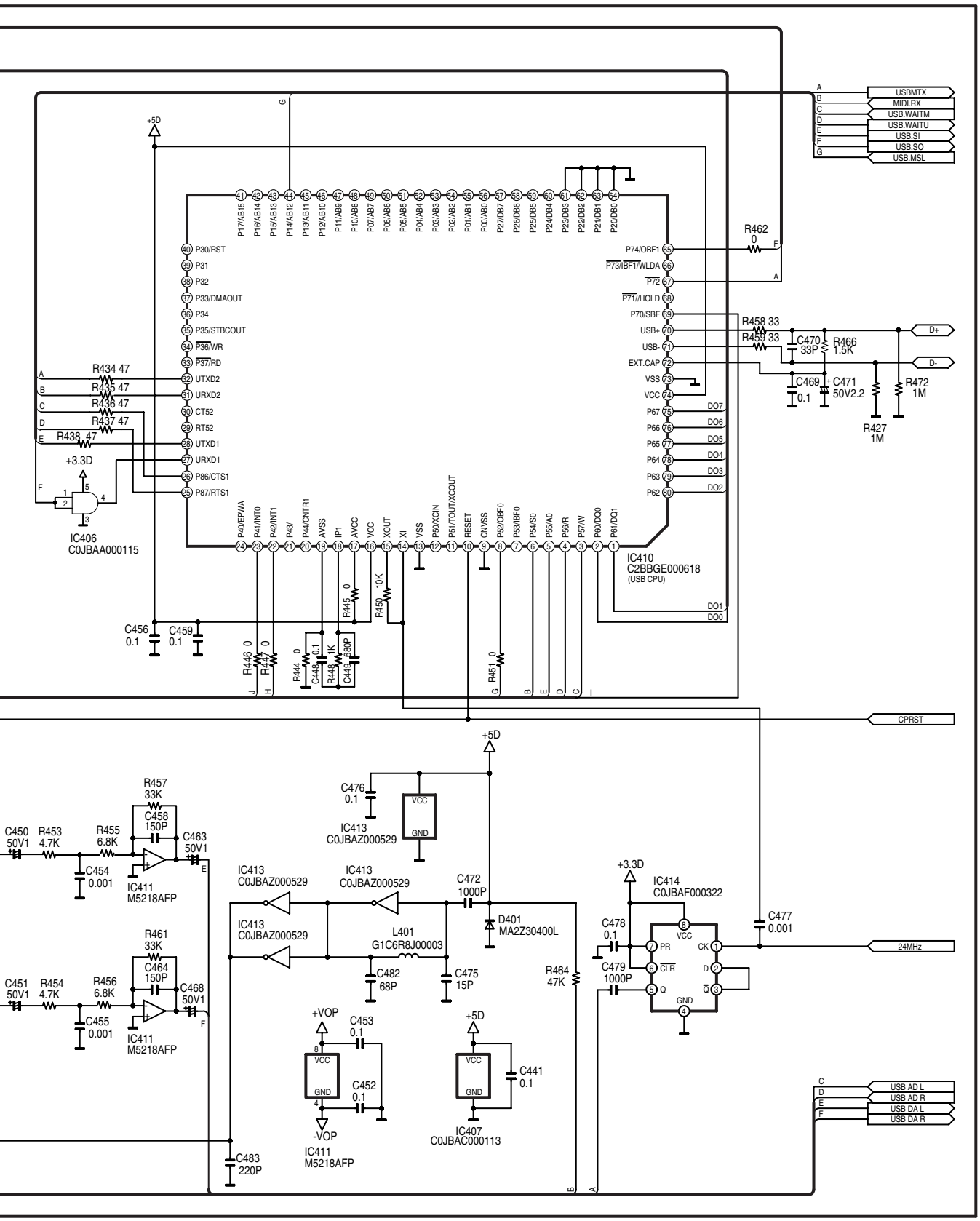


SX-KN2400 MAIN 4/5 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM-7

A MAIN 5/5 CIRCUIT

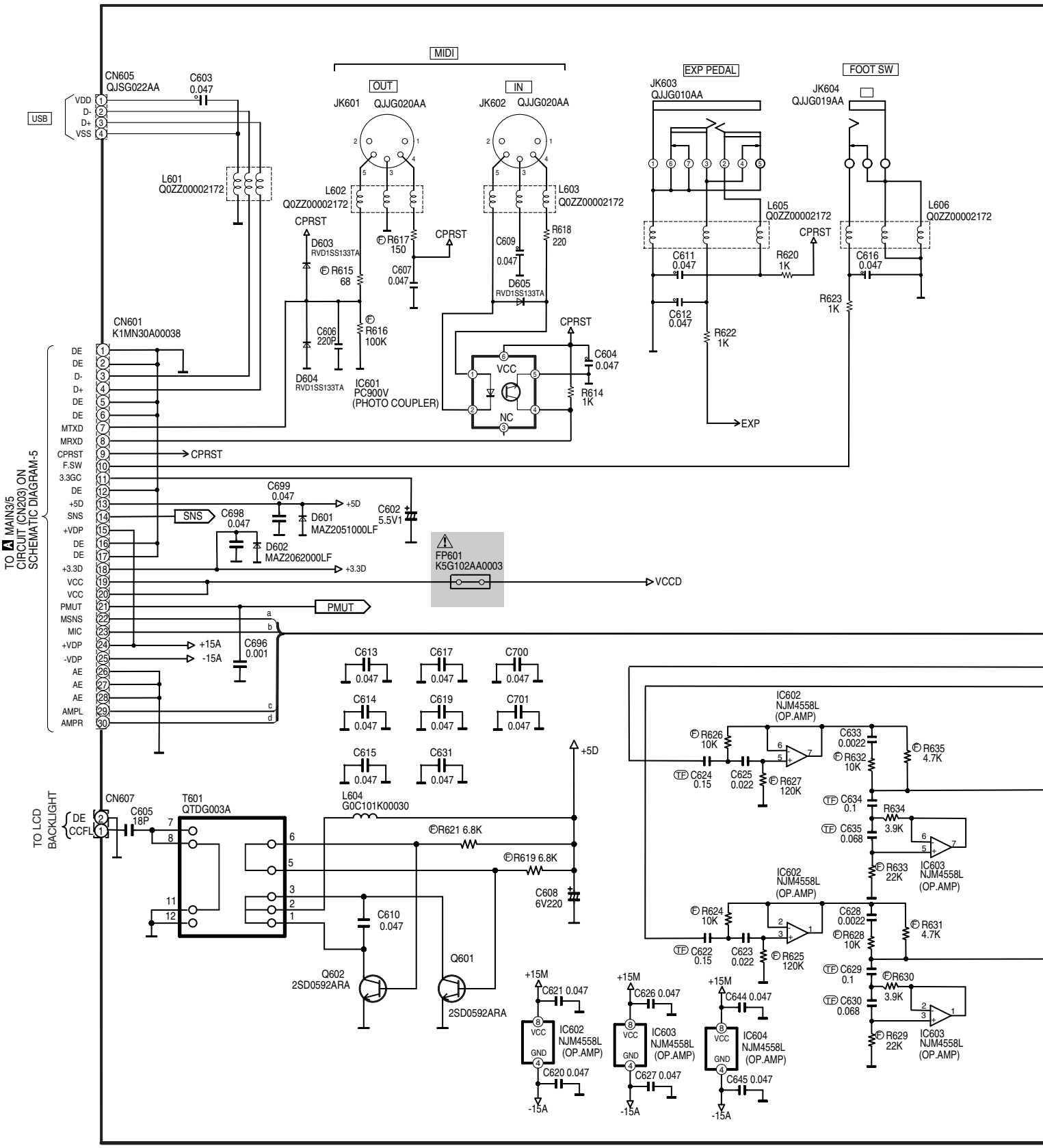


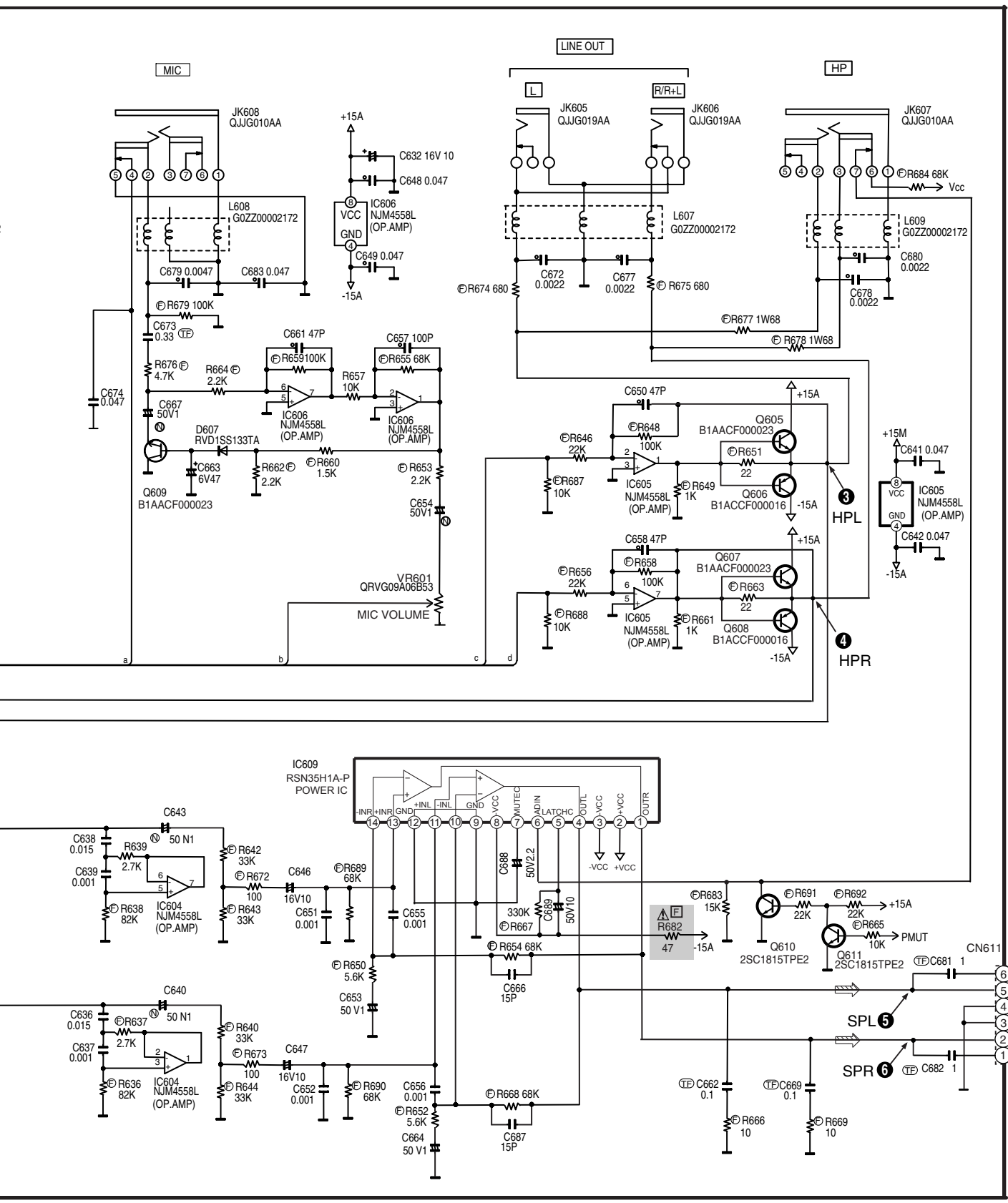


SX-KN2400 MAIN 5/5 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM-8

B FAJ 1/2 CIRCUIT

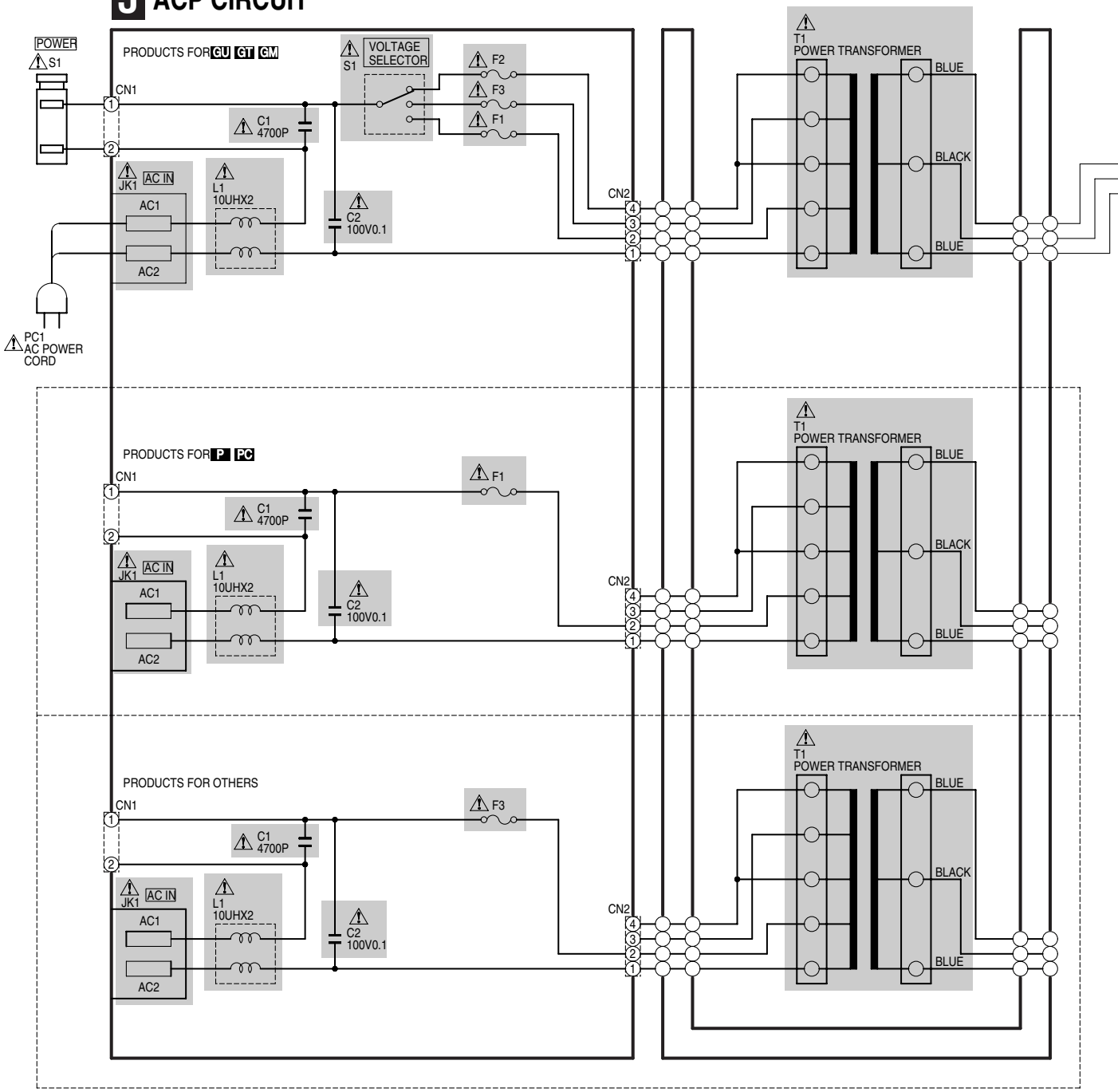




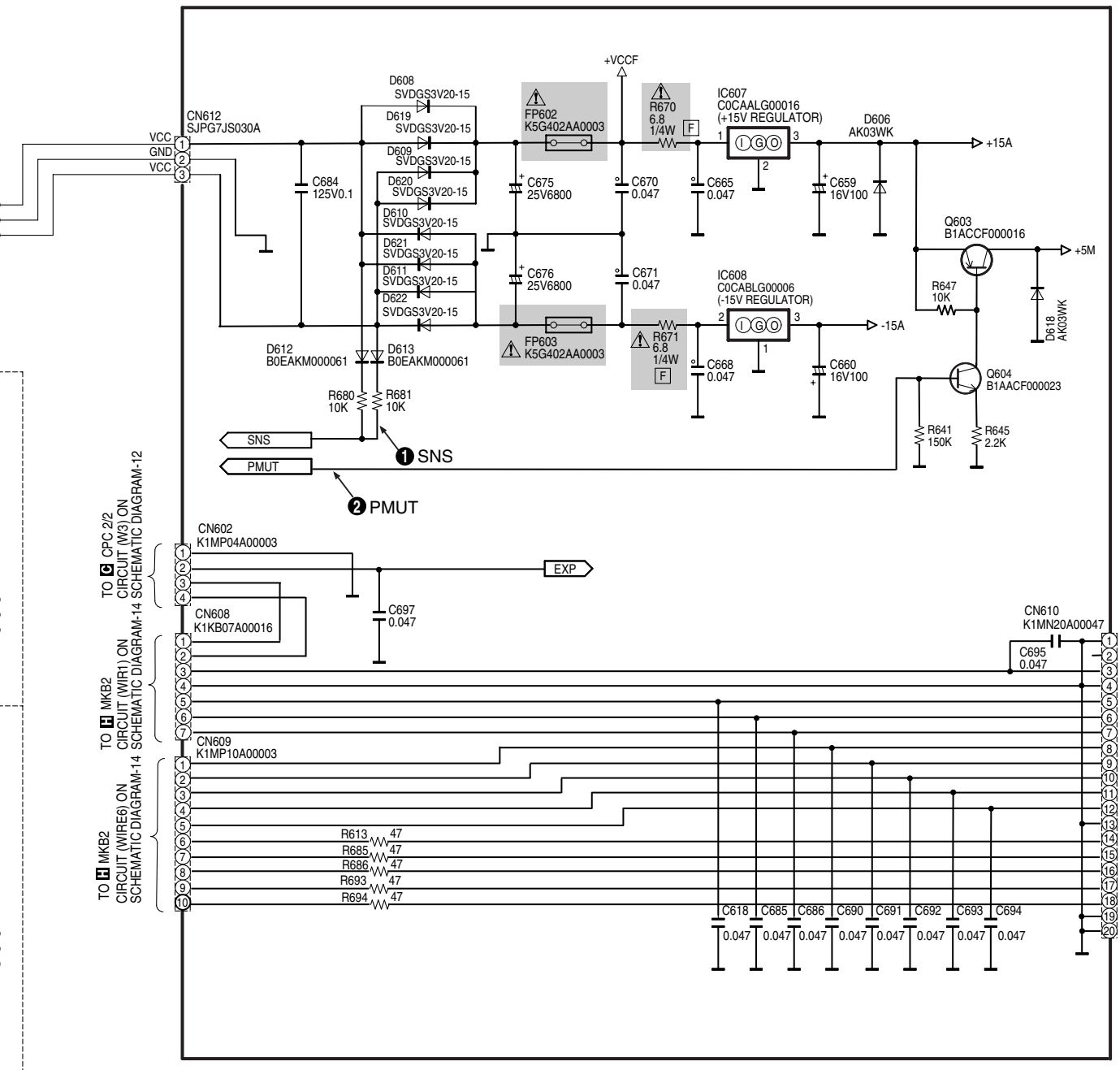
SX-KN2400 FAJ 1/2 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM- 9

J ACP CIRCUIT

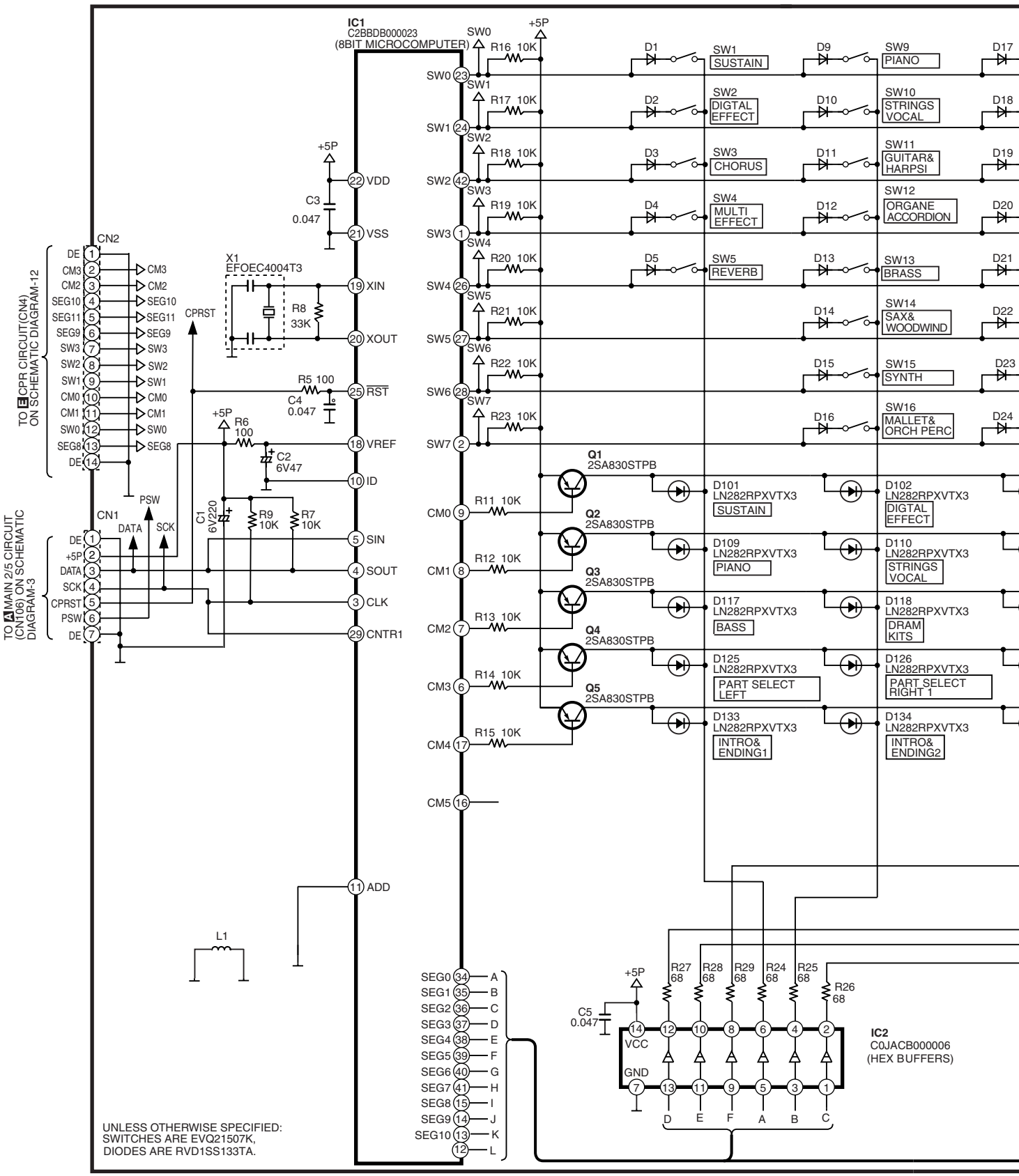


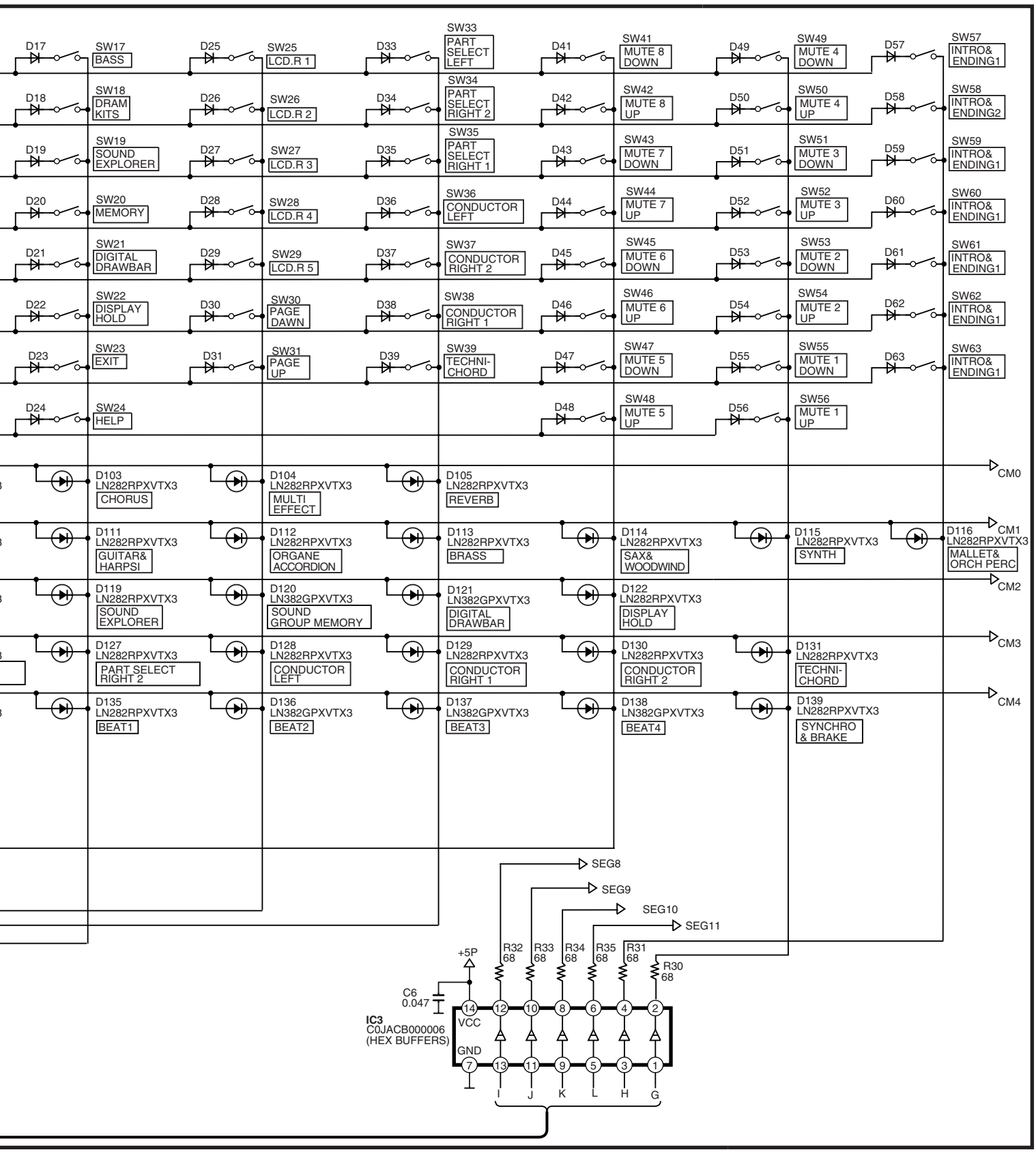
B FAJ 2/2 CIRCUIT



SCHEMATIC DIAGRAM-10

C CPC 1/2 CIRCUIT

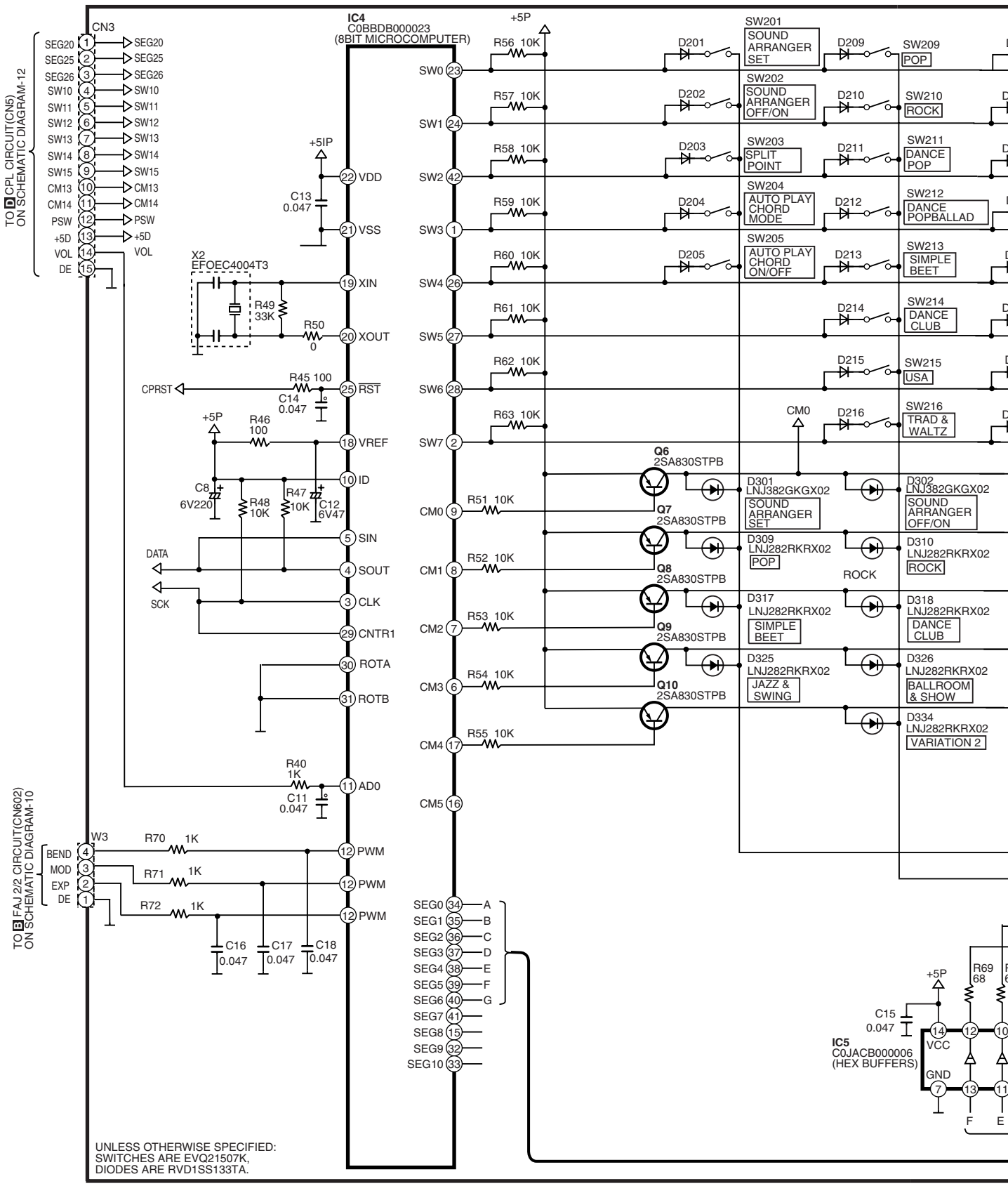


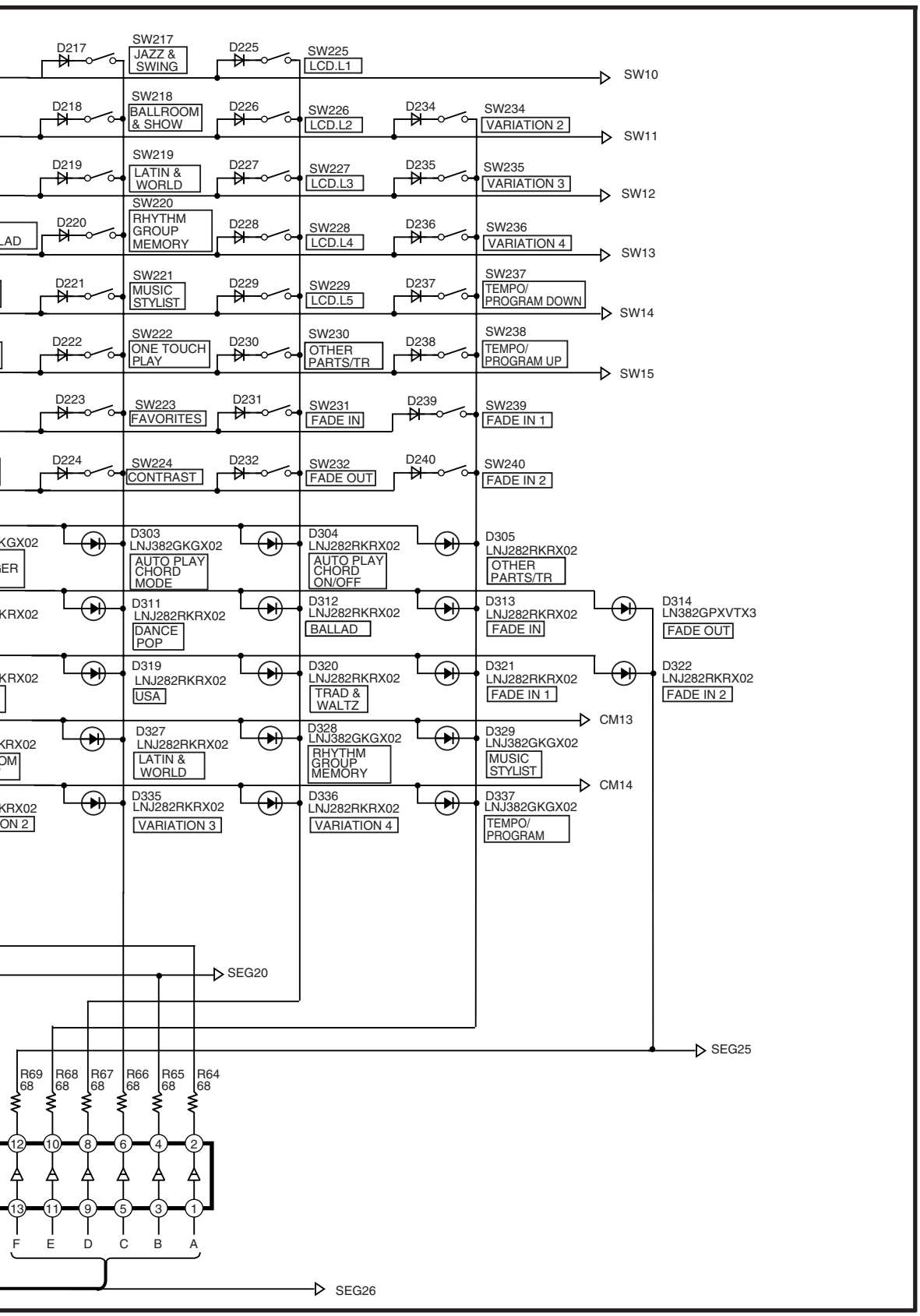


SX-KN2400 CPC 1/2 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM-11

C CPC 2/2 CIRCUIT

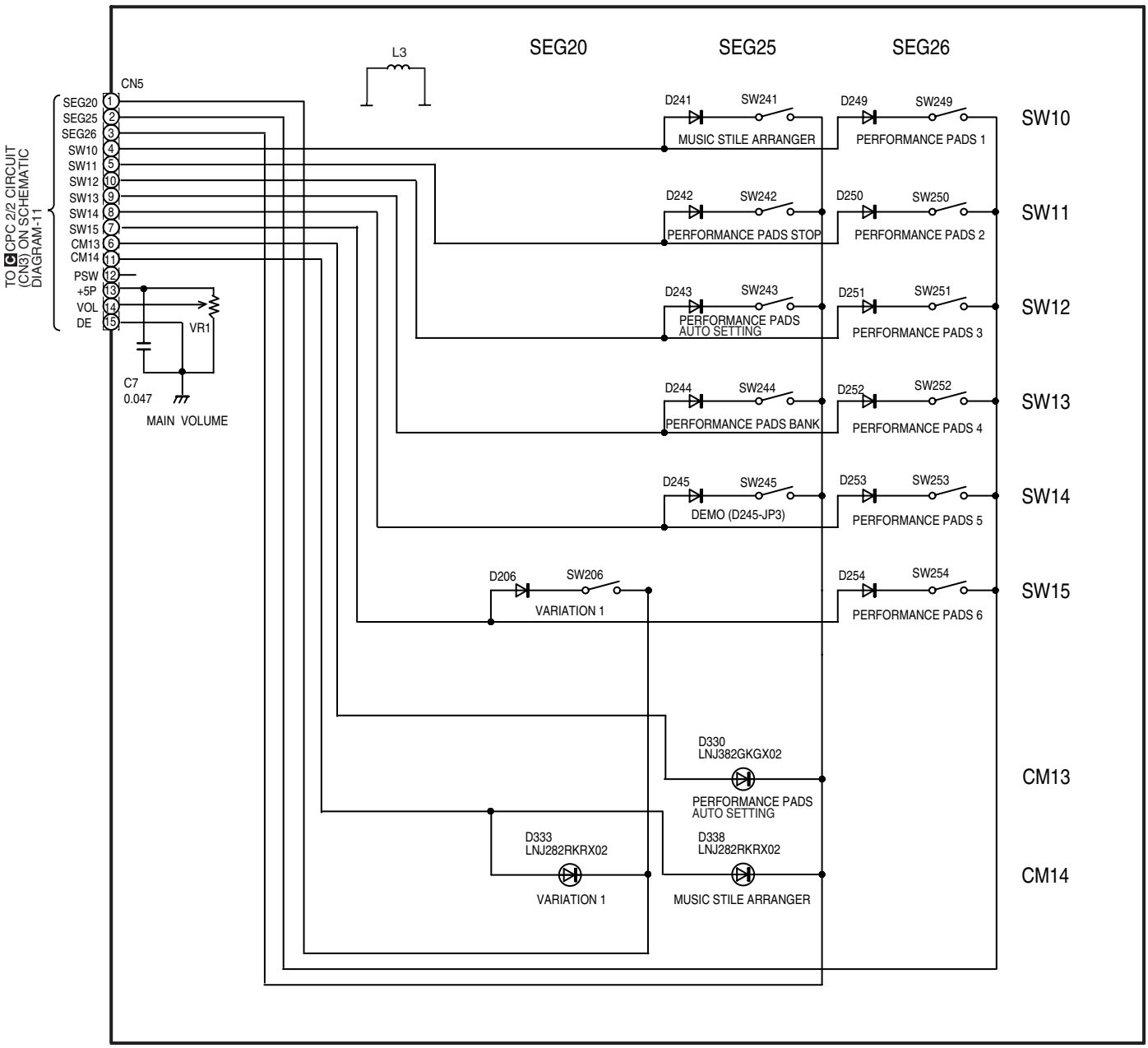




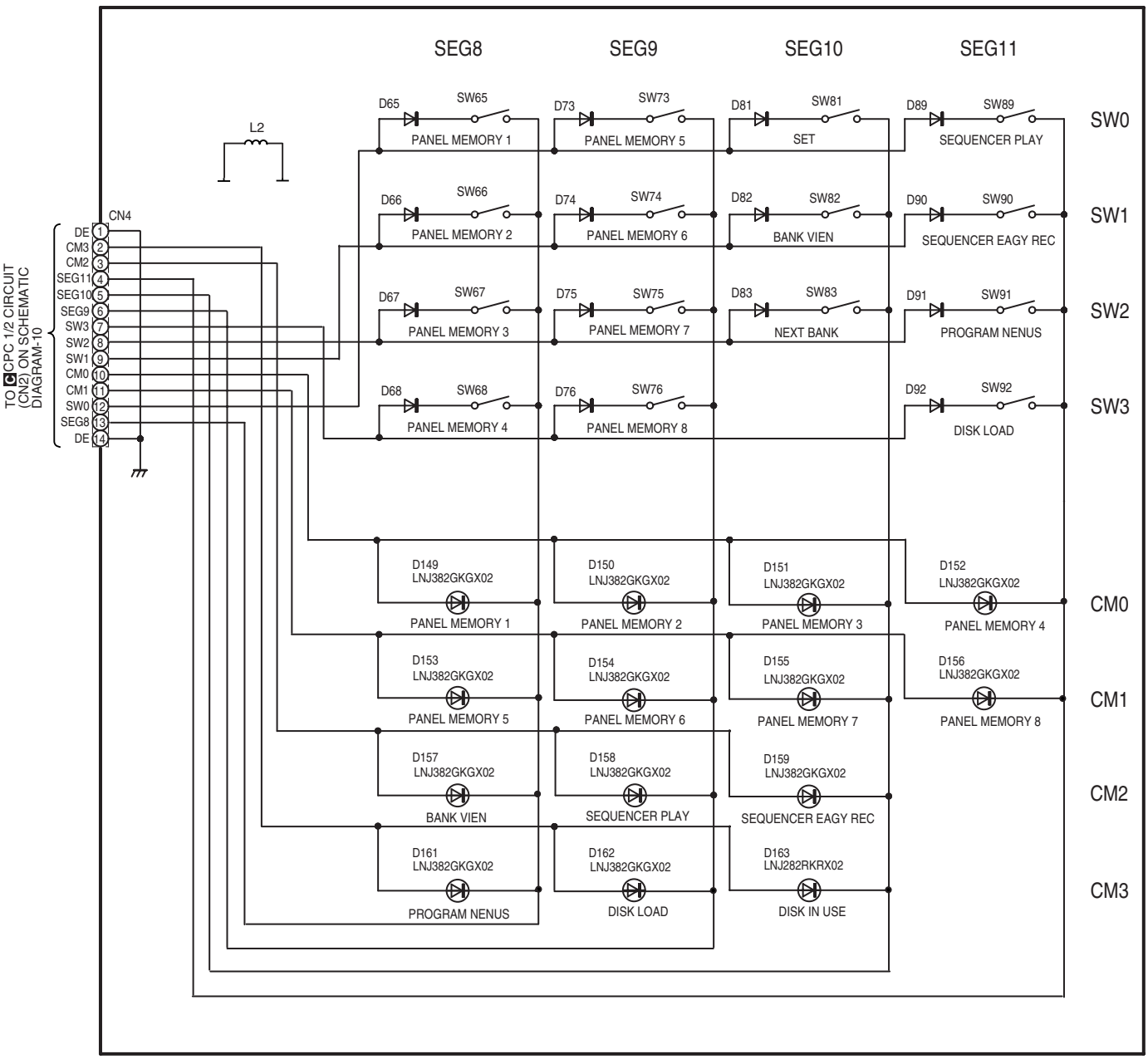
SX-KN2400 CPC 2/2 SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM-12

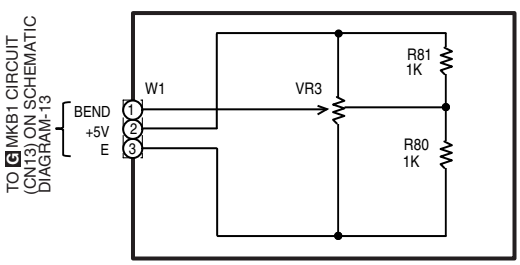
D CPL CIRCUIT



E CPR CIRCUIT



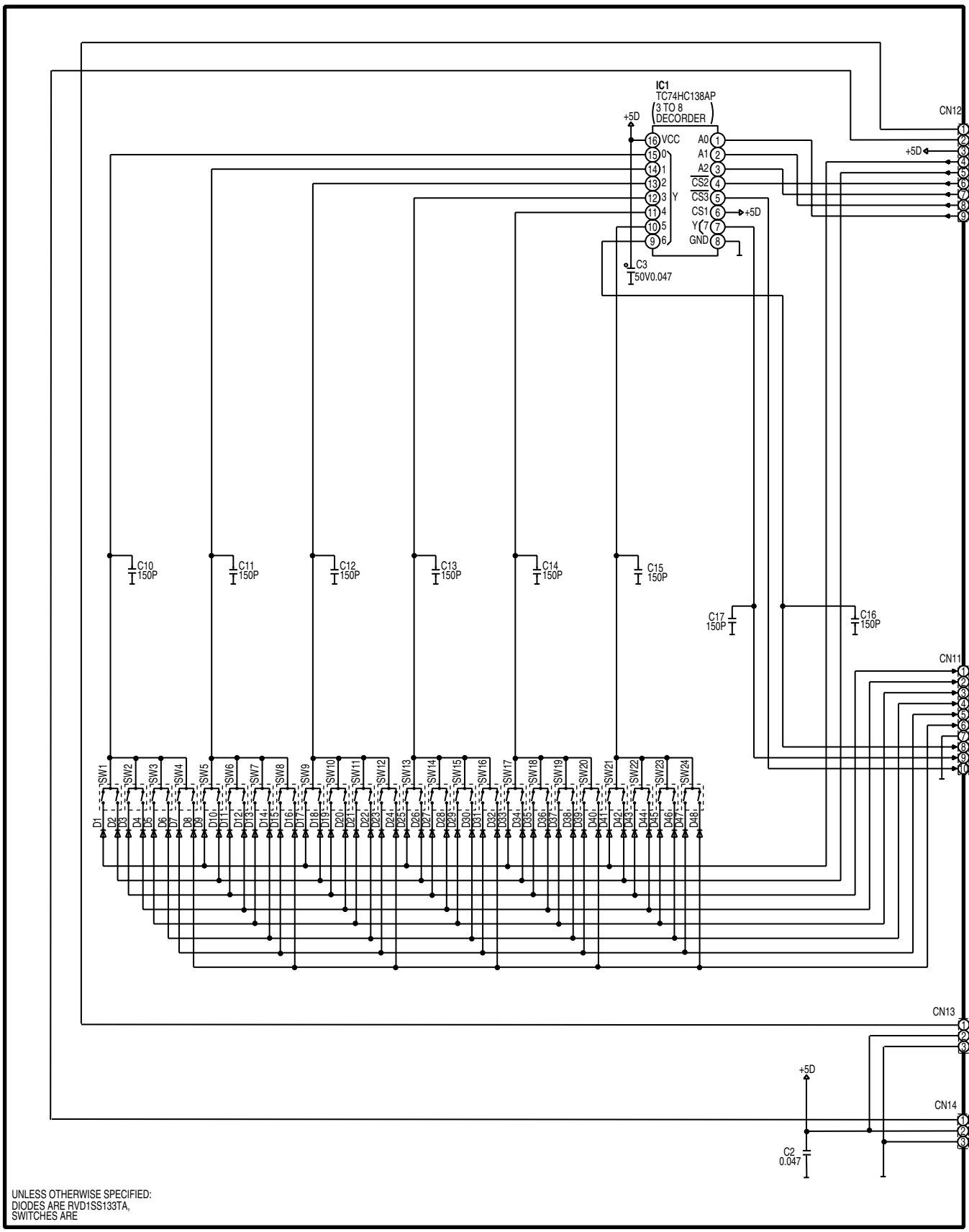
F BEND CIRCUIT



SX-KN2400 CPL/CPR/BEND SCHEMATIC DIAGRAM

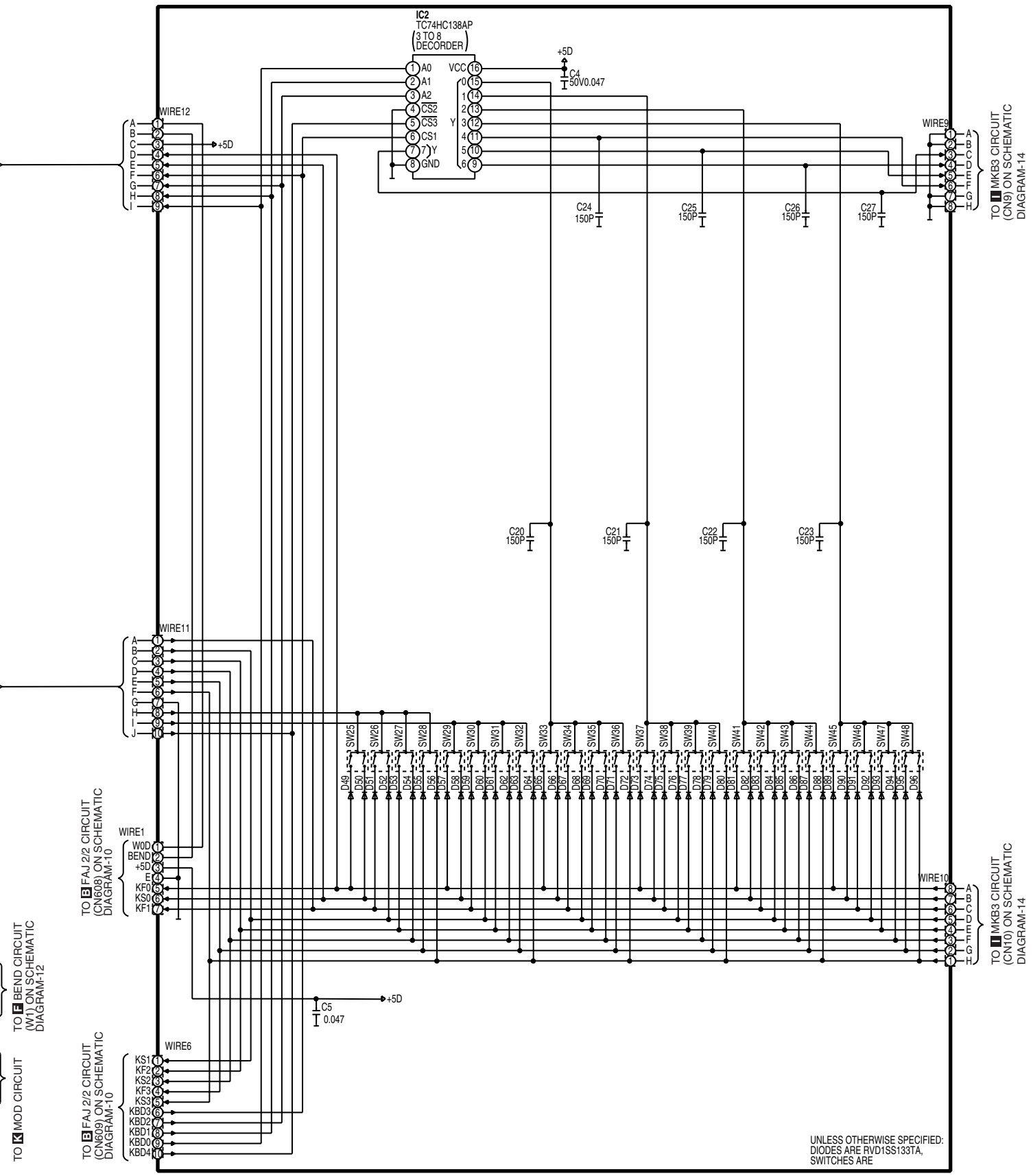
SCHEMATIC DIAGRAM-13

G MKB1 CIRCUIT



UNLESS OTHERWISE SPECIFIED:
DIODES ARE RVD1SS133TA,
SWITCHES ARE

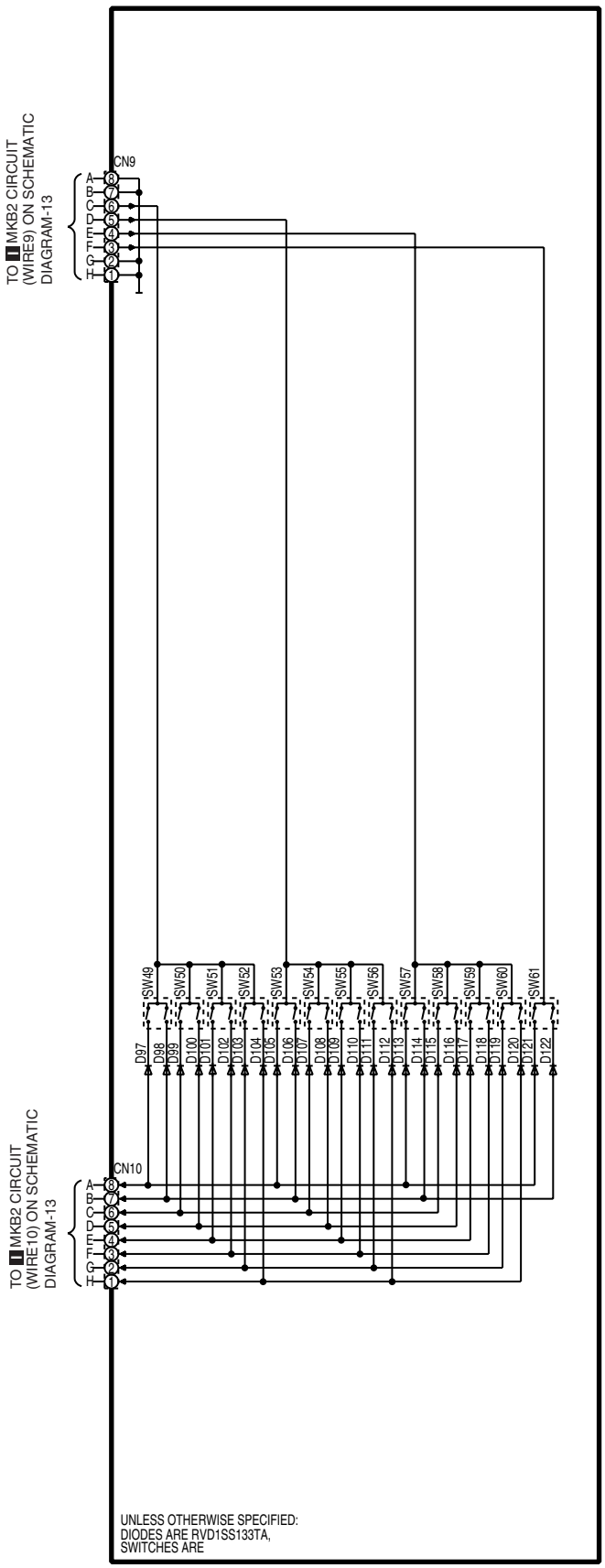
H MKB2 CIRCUIT



SX-KN2400 MKB1/MKB2 SCHEMATIC DIAGRAM

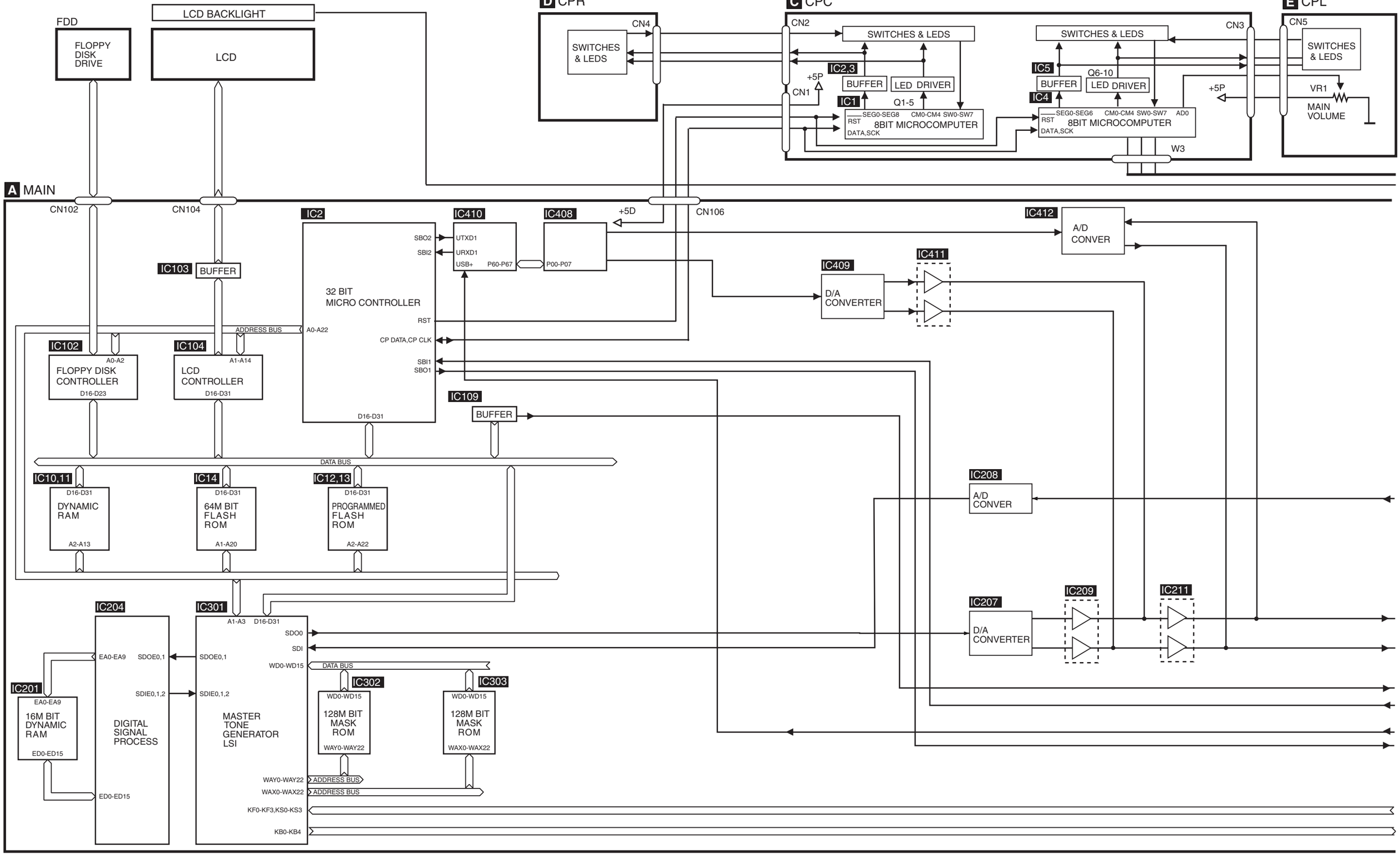
SCHEMATIC DIAGRAM-14

I MKB3 CIRCUIT



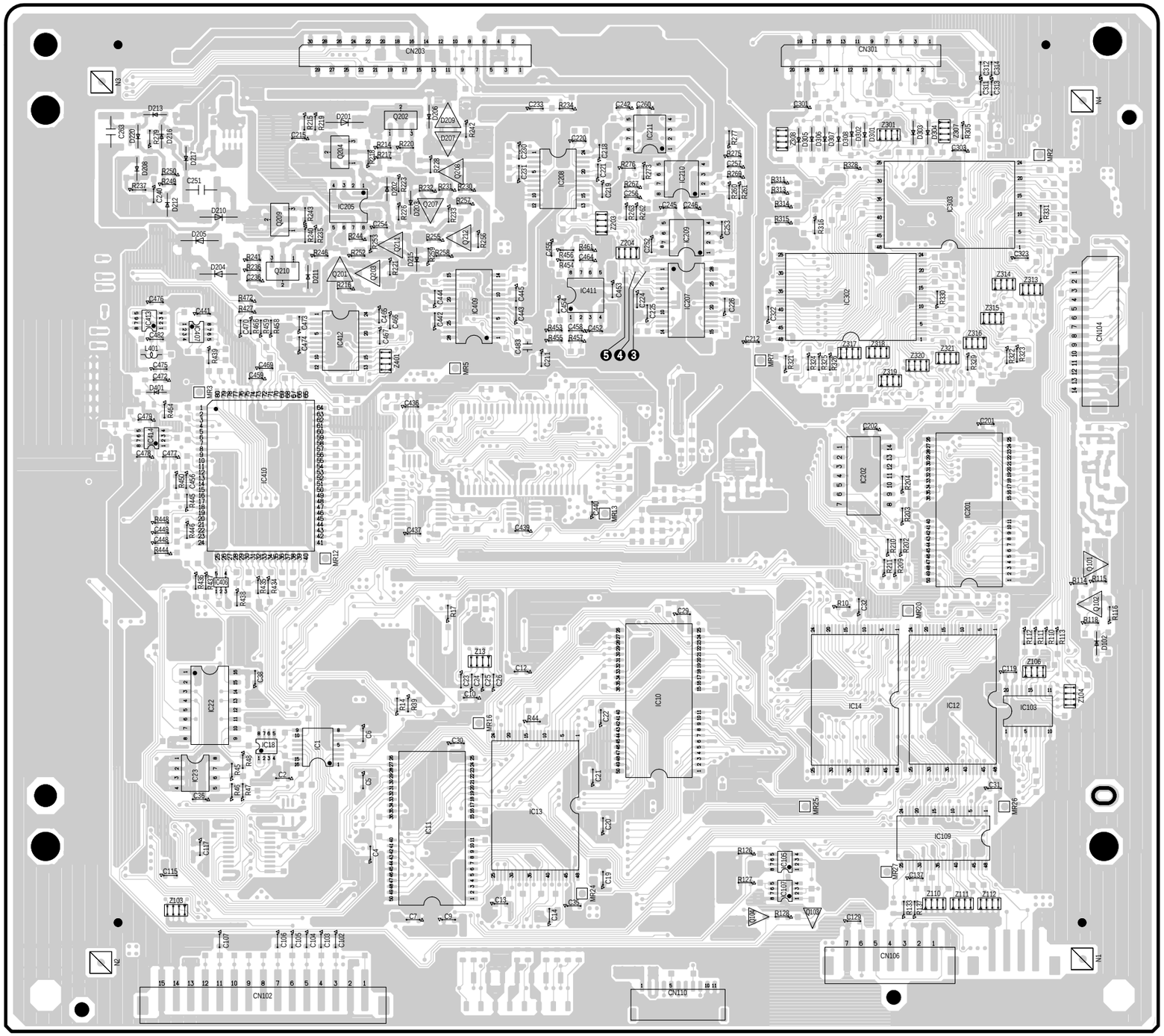
SX-KN2400 MKB3 SCHEMATIC DIAGRAM

AM

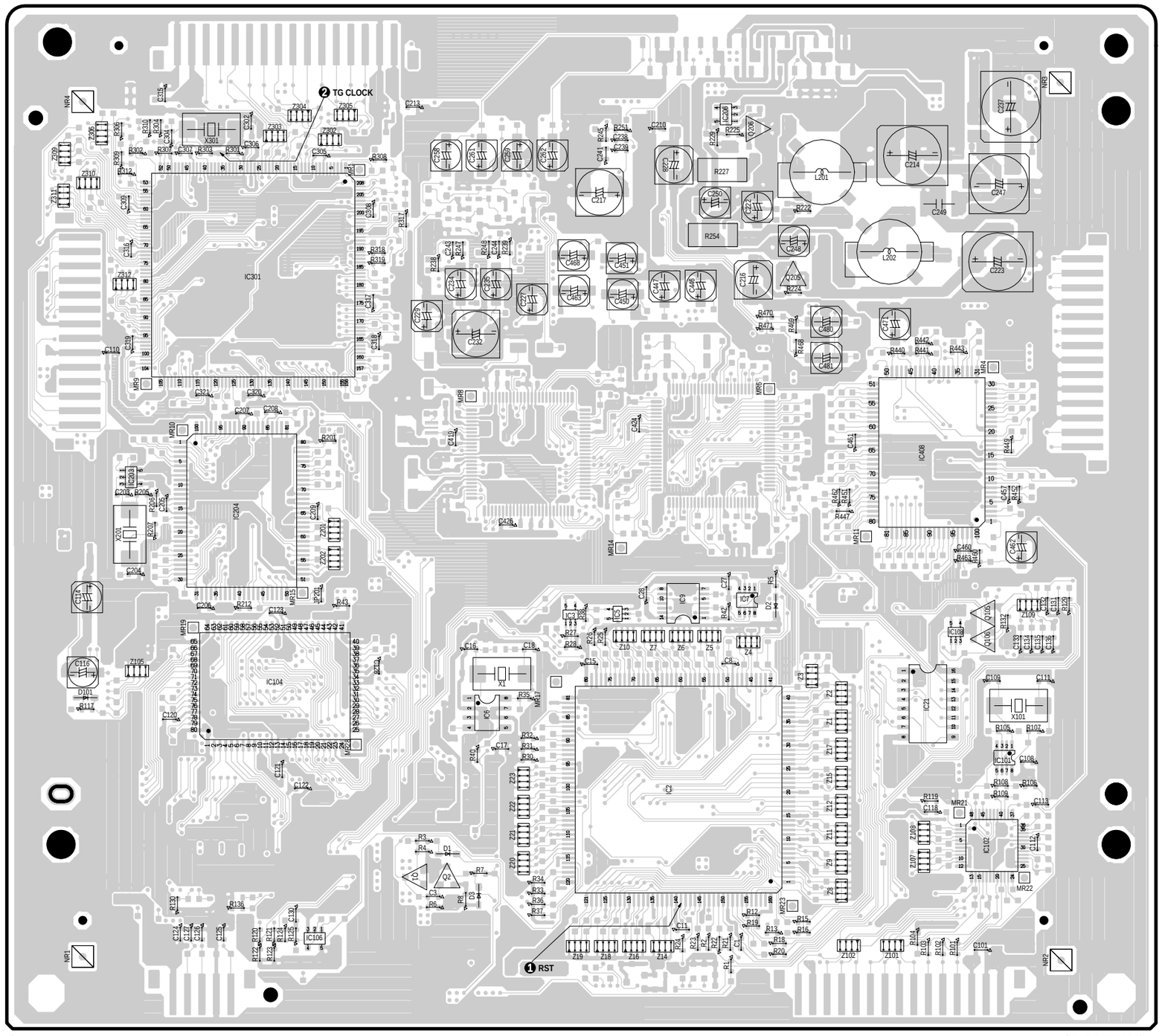

FDD
FLOPPY DISK DRIVE
LCD BACKLIGHT
LCD
D CPR
SWITCHES & LEDS
CN4
C CPC
CN2
SWITCHES & LEDS
IC2,3
BUFFER
LED DRIVER
+5P
CN1
IC1
Q1-5
SEG0-SEG8
CM0-CM4
SW0-SW7
RST
8BIT MICROCOMPUTER
DATA,SCK
SWITCHES & LEDS
CN3
IC5
Q6-10
BUFFER
LED DRIVER
IC4
+5P
SEG0-SEG6
CM0-CM4
SW0-SW7
AD0
RST
8BIT MICROCOMPUTER
DATA,SCK
W3
E CPL
CN5
SWITCHES & LEDS
VR1
MAIN VOLUME
A MAIN
CN102
CN104
CN106
+5D
IC103
BUFFER
IC2
IC410
IC408
SBO2
SBI2
UTXD1
URXD1
USB+
P60-P67
P00-P07
32 BIT MICRO CONTROLLER
RST
CP DATA,CP CLK
SBI1
SBO1
D16-D31
IC412
A/D CONVER
IC409
D/A CONVERTER
IC411
ADDRESS BUS
A0-A22
IC102
A0-A2
FLOPPY DISK CONTROLLER
D16-D23
IC104
A1-A14
LCD CONTROLLER
D16-D31
IC109
BUFFER
DATA BUS
IC10,11
D16-D31
DYNAMIC RAM
A2-A13
IC14
D16-D31
64M BIT FLASH ROM
A1-A20
IC12,13
D16-D31
PROGRAMMED FLASH ROM
A2-A22
IC208
A/D CONVER
IC207
D/A CONVERTER
IC209
IC211
IC204
IC301
A1-A3
D16-D31
SDO0
SDI
EA0-EA9
SDOE0,1
SDIE0,1,2
WD0-WD15
DATA BUS
IC201
EA0-EA9
16M BIT DYNAMIC RAM
ED0-ED15
DIGITAL SIGNAL PROCESS
MASTER TONE GENERATOR LSI
IC302
WD0-WD15
128M BIT MASK ROM
WAY0-WAY22
IC303
WD0-WD15
128M BIT MASK ROM
WAX0-WAX22
WAY0-WAY22
ADDRESS BUS
WAX0-WAX22
ADDRESS BUS
KF0-KF3,KS0-KS3
KB0-KB4

F BEND
PITCH BEND
VR3
W1
K MOD
MODULATION
VR2
W2
G MKB1
CN13
CN12
CN14
CN11
SWITCHES & DIODES
DECODER
IC1
WIRE12
WIRE11
WIRE6
H MKB2
+5D
IC2
DECODER
SWITCHES & DIODES
WIRE1
I MKB3
WIRE9
WIRE10
CN9
CN10
SWITCHES & DIODES
J ACP
JK1
CN1
CN2
AC CORD
SW1
POWER SWITCH
T1
POWER
TRANSFORMER
B FAJ
CN203
CN601
CN609
CN608
CN602
CN612
CN607
+5D
T601
Q601,602
+5D
+VCC
+15A
-15A
+3.3D
+5A
+15A
IC607
+15V
REGULATOR
D608,609
D619,620
-15A
IC608
-15V
REGULATOR
D608,609
D619,620
FP601
+VCC
IC605,Q605,6
IC605,Q607,8
HEADPHONE
AMPLIFIER
IC602,3,4
EQUALIZING
IC602,3,4
IC609
POWER
AMPLIFIER
CN611
SP1(Rch)
12cm; 4Ω
SP2(Rch)
6.5cm; 8Ω
SP1(Lch)
12cm; 4Ω
SP2(Lch)
6.5cm; 8Ω
JK605
L
JK606
R
LINE OUT
JK607
HEADPHONE
IC606
JK608
MIC
VR601
MIC VOLUME
JK603
EXP PEDAL
JK604
FOOT SW
CN605
USB
IC601
PHOTO
COUPLER
JK3
MIDI IN
Q2
JK4
MIDI OUT
CN301
CN610

A MAIN P.C.B. (A SIDE)

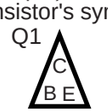


A MAIN P.C.B. (B SIDE)



(SXPG239611)

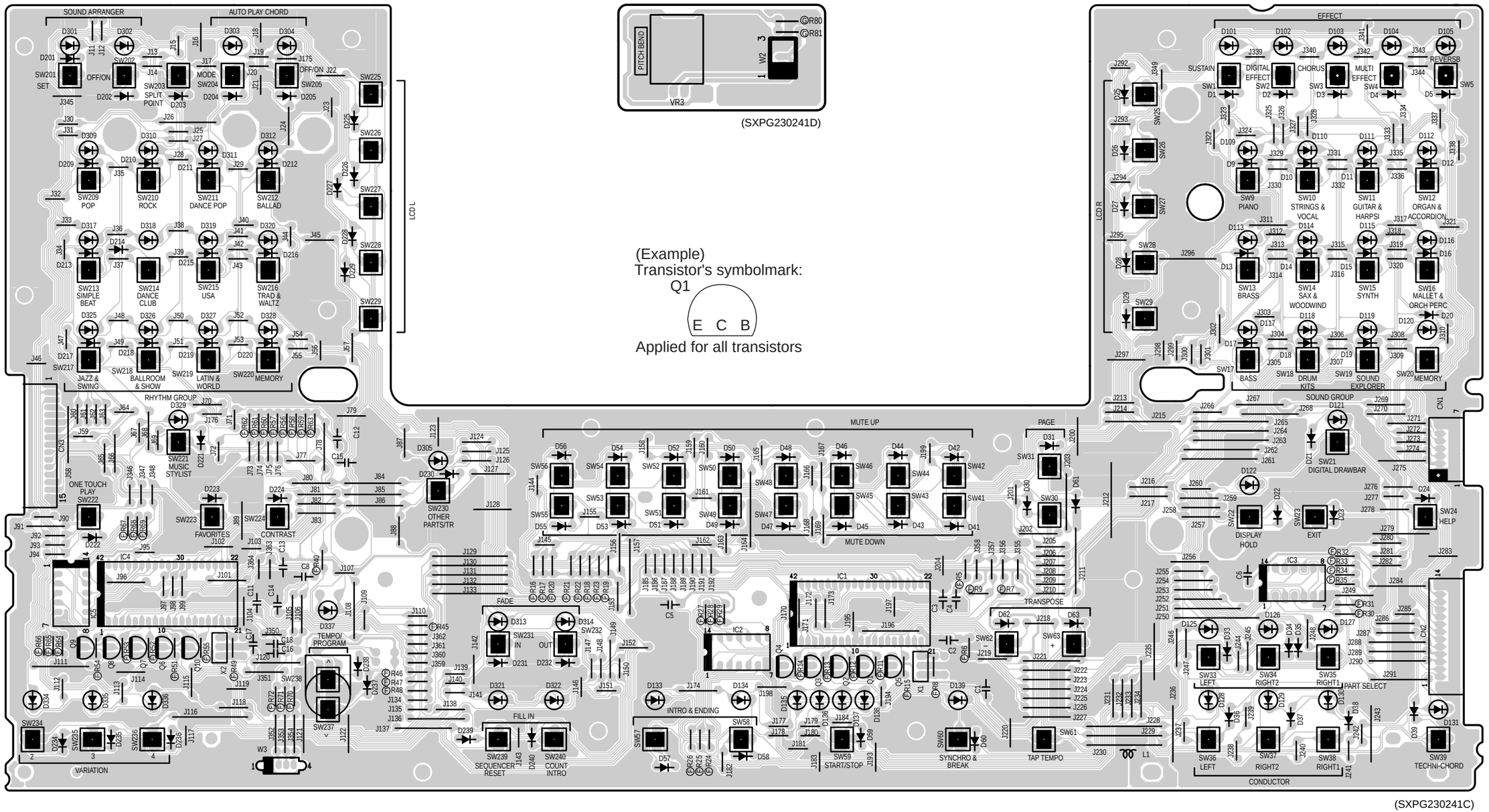
(Example)
Transistor's symbolmark:
Q1



Applied for all transistors

SX-KN2400
MAIN P.C.B.

C CPC P.C.B.



(SXPG230241C)

F BEND P.C.B.

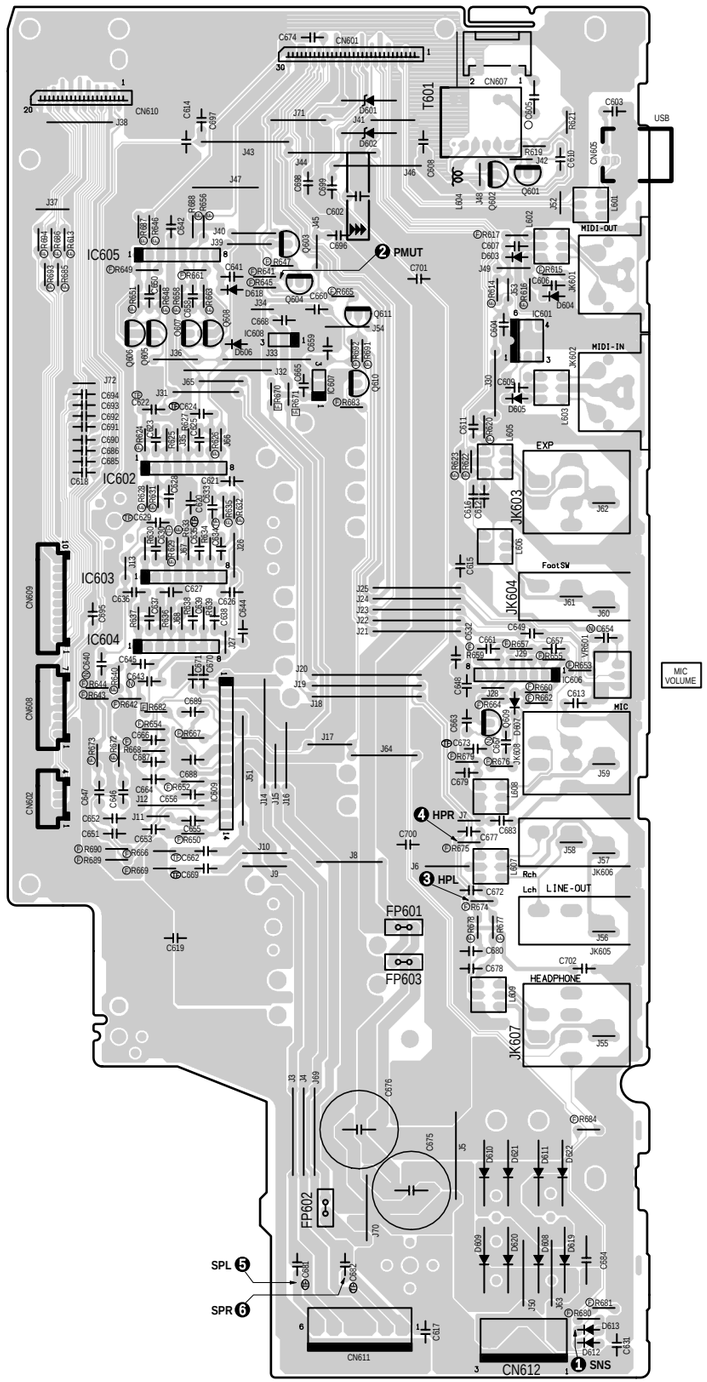
(SXPG230241D)

(Example)
Transistor's symbolmark:
Q1

Applied for all transistors

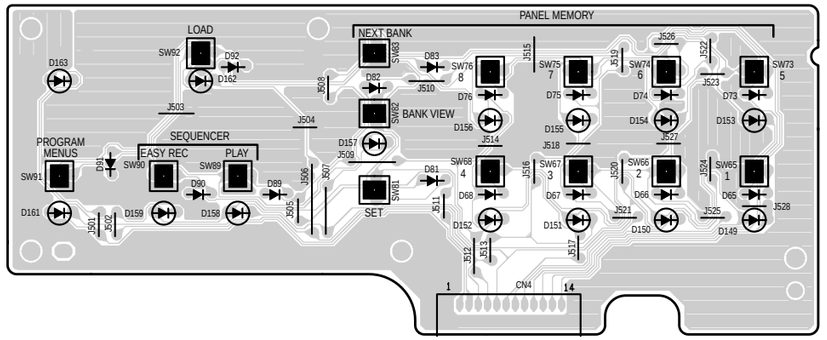
SX-KN2400
CPC / BEND P.C.B.

B FAJ P.C.B.



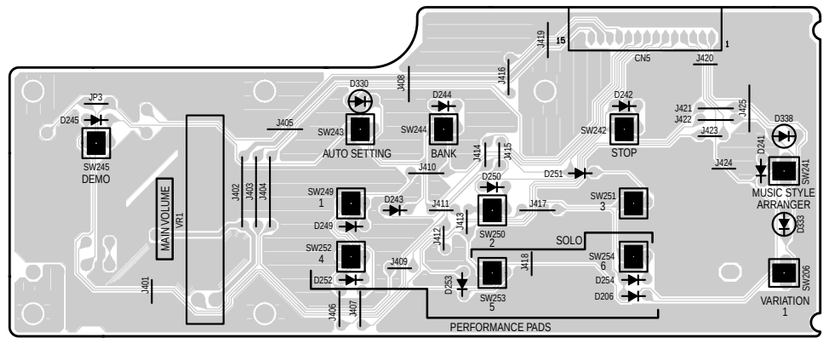
(SXPG239711)

E CPR P.C.B.



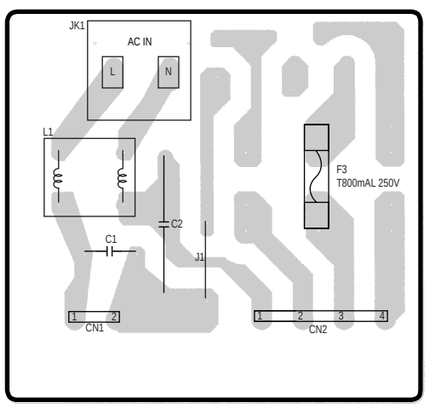
(SXPG230241B)

D CPL P.C.B.



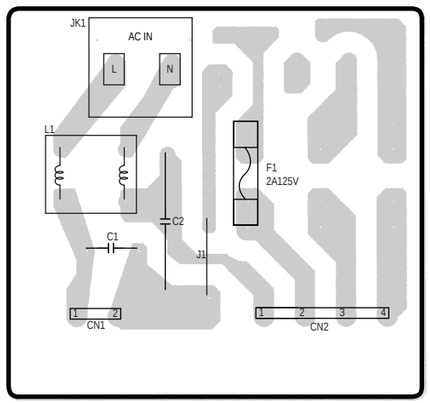
(SXPG230241A)

J ACP P.C.B.(EX,EB,EG,EQ,EH,GN,GH)



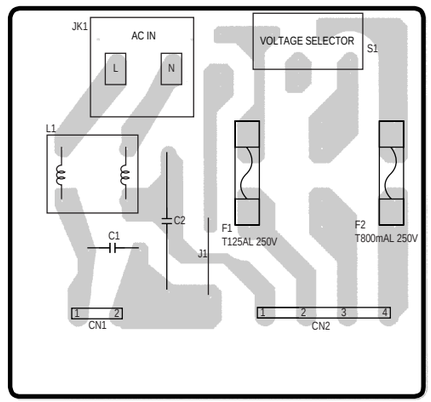
(SXPG232941)

J ACP P.C.B.(P,PC)



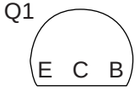
(SXPG232951)

J ACP P.C.B.(GU,GT,GM)



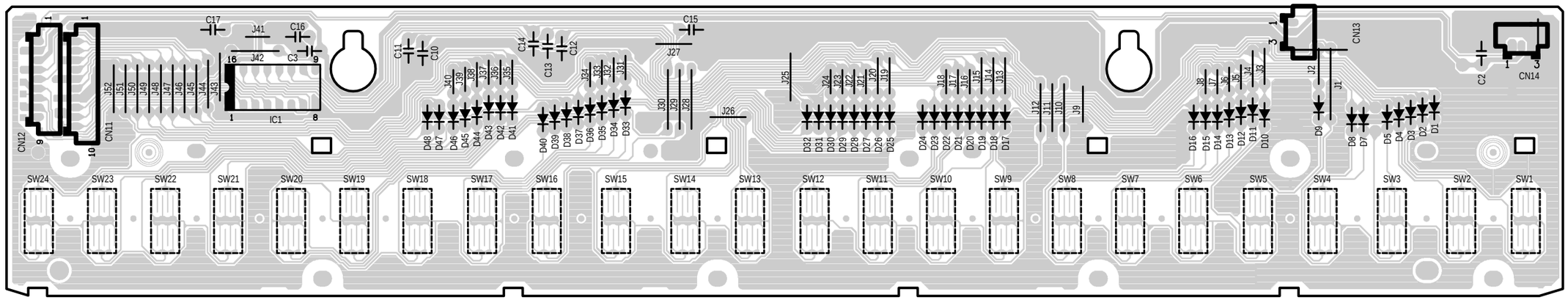
(SXPG232961)

(Example)
Transistor's symbolmark:
Q1



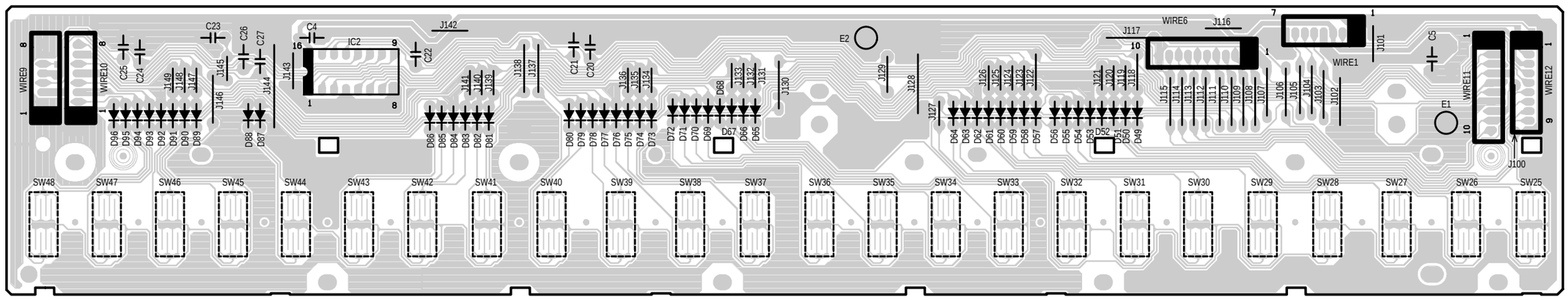
Applied for all transistors

G MKB1 P.C.B.


CN12
CN11
IC1
CN13
CN14
SW24 SW23 SW22 SW21 SW20 SW19 SW18 SW17 SW16 SW15 SW14 SW13 SW12 SW11 SW10 SW9 SW8 SW7 SW6 SW5 SW4 SW3 SW2 SW1

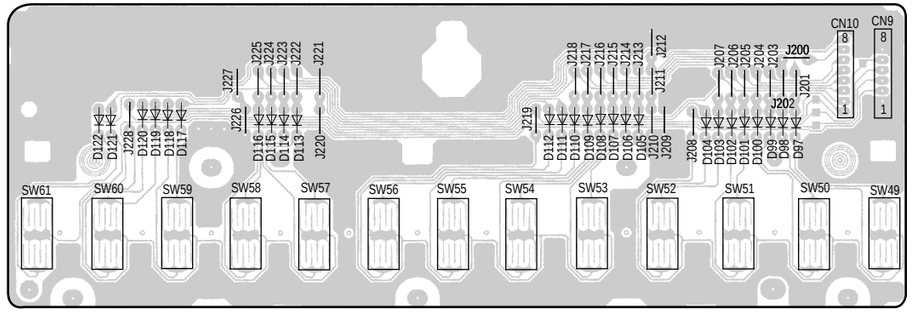
(SXPG239811A)

H MKB2 P.C.B.



(SXPG239811B)

I MKB3 P.C.B.



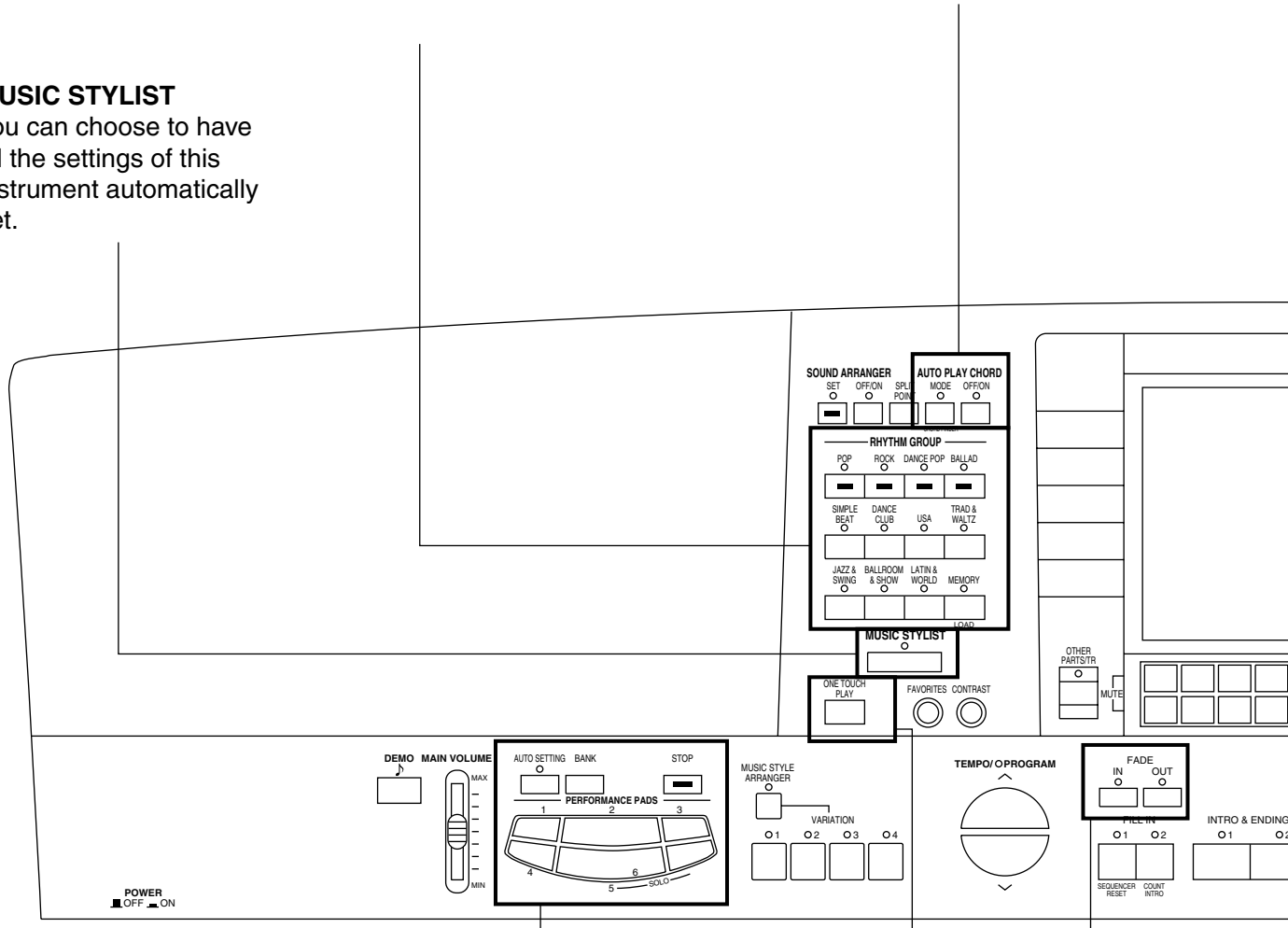
(SXPG234411)

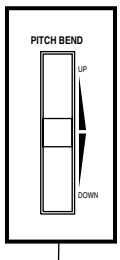
Controls and functions (KN2400)

AUTO PLAY CHORD
Add an automatic accompaniment to your selected rhythm.

RHYTHM GROUP
Various rhythm patterns are available for each rhythm group.

MUSIC STYLIST
You can choose to have all the settings of this instrument automatically set.





PERFORMANCE PADS
Add various phrases to your performance with the pad buttons.

ONE TOUCH PLAY
Sounds and effects matching the selected rhythm are automatically set.

FADE IN/OUT
Begin your song with a slowly increasing volume, or end it by having the sound slowly fade away.

PITCH BEND
The **PITCH BEND** wheel allows a “sliding” change in the pitch.

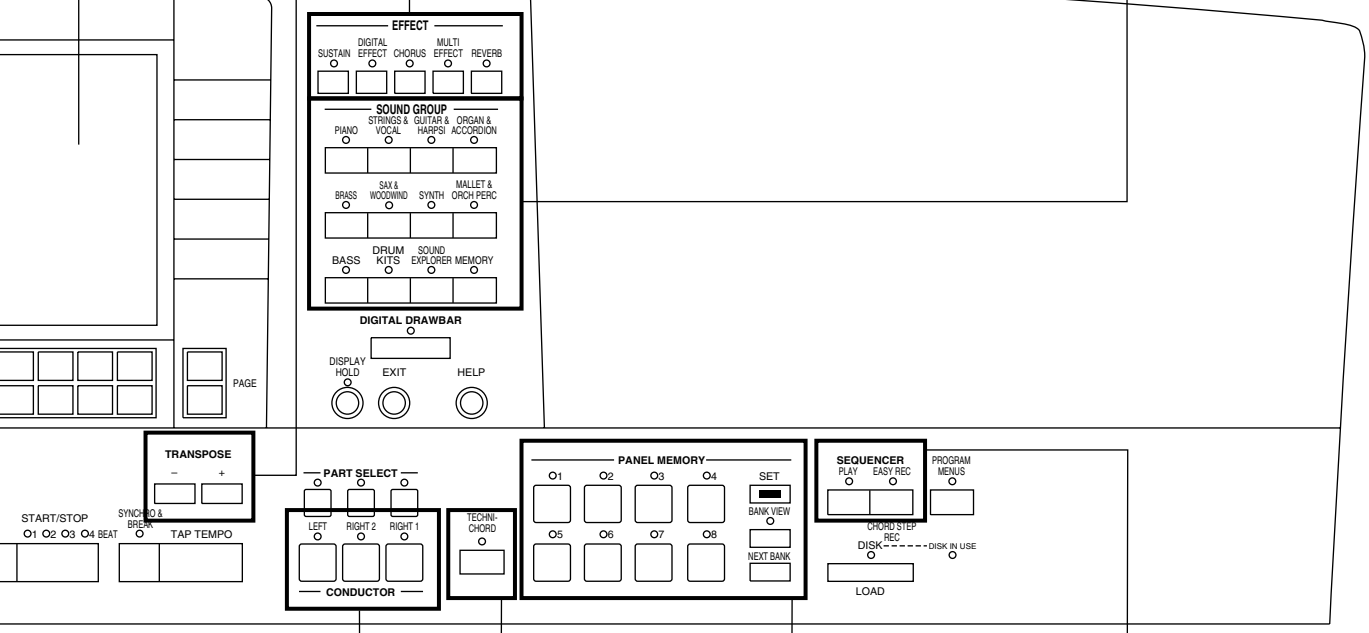
DISPLAY
Displays performance information, function settings and other messages.

- Use the **CONTRAST** buttons to adjust the display so that it is easy to read.

EFFECT
Add various effects to the sounds.

TRANSPOSE
Raise or lower the key of the entire keyboard.

SOUND GROUP
Various sounds are available for each sound group.



TECHNI-CHORD
Block chords are automatically added to the melody.

SEQUENCER
Record and play back your performance.

CONDUCTOR
Assign a different sound to each part, then assign the desired parts to section of the keyboard.

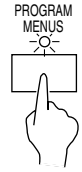
PANEL MEMORY
Store the panel settings, then recall them instantaneously just by pressing a button or two.

Initialize

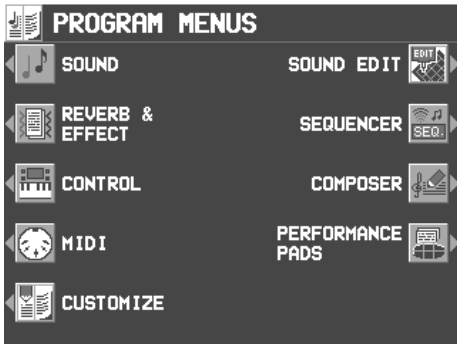
This Keyboard has many settable functions and storable memories. However, you can return the settings and memory to the factory-preset status.

INITIAL

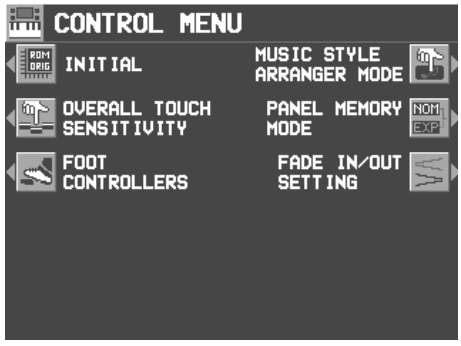
1. Press the **PROGRAM MENUS** button to turn it on.



- The display changes to the following.



2. Select CONTROL.
   - The display looks similar to the following.



3. Select INITIAL.
   - This display changes to the following.

4. Use the ▲ and ▼ buttons to select the desired type of initialization.
   - PERFORMANCE includes all the items which are listed below it.

5. Press the OK button.
   - The display changes to the confirmation display. Press the YES button if you wish to execute the initialization. Press the NO button if you wish to cancel the procedure.

   - Initialization begins. When initialization is completed, “COMPLETED!” is shown on the display and the Keyboard returns to the normal perform-ance mode.
   - The USER MIDI and FAVORITES are not initialized by this procedure.

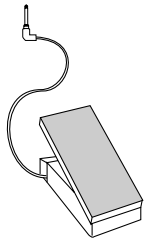
You can also reset all the PERFORMANCE items with the following procedure:
Turn off the power to this instrument once. Then, while pressing the three lower left buttons in the **RHYTHM GROUP** section (**JAZZ & SWING**, **BALLROOM & SHOW** and **LATIN & WORLD**) at the same time, turn the power on again.

About the performance data

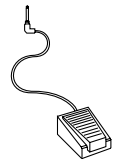
PERFOR-MANCE	CURRENT PANEL settings
	PANEL MEMORY
	SEQUENCER
	COMPOSER (MEMORY contents)
	PERFORMANCE PADS (USER memories)
	SOUND MEMORY
	EFFECT MEMORY
BACKUP	MIDI (USER for the MIDI PRESETS) & FAVORITES

- The BACK UP data will not be erased even with the passage of time.
- The backup memory does not function for the stored contents until the power has been on for about 10 minutes.
- If you wish to retain the settings and stored memory contents for recall at a later time, store the desired data on a disk/SD card.
- Data from previous Technics models may be limited to PERFORMANCE data.

Separately sold options



SZ-E2
Expression Pedal

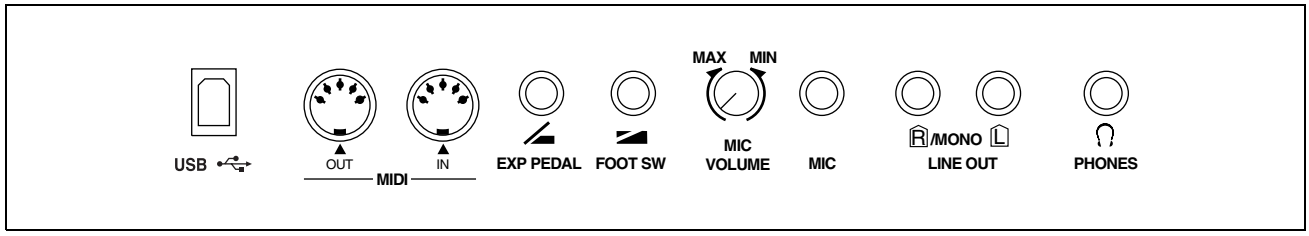


SZ-P1
Foot Switch

PLUG-IN feature
This model is compatible with third-party extension plug-in software for the **KN2400/KN2600**. See plug-in documentation for information about software features and operation.

Terminals

Back panel terminals



USB
This terminal allows connection to a personal computer with a USB cable (commercially available type AB cable).
Used with the applications on the included CD-ROM, you can record this instrument's audio sound or manage the instrument data with your PC.

- **Applications**
  Audio Recorder:
  Application for Recording this instrument's sounds and for saving recorded digital audio files in WAV, WMA (Windows Audio Format) and MP3 formats.
  Song Manager:
  Application for managing this instrument's data on your PC by means of a USB cable.

MIDI
These terminals are for connection to another MIDI instrument.

EXP PEDAL
The optional SZ-E2 Expression Pedal (sold separately) can be connected to this terminal to control the volume.

FOOT SW
An optional SZ-P1 Foot Switch (sold separately) can be connected to each terminal to control various functions.

MIC
A microphone can be connected to this terminal.

- Adjust the volume using **MIC VOLUME**.

LINE OUT
The total sound of this instrument can be output from this terminal.

- For monaural output, connect the plug only in the **R/MONO** terminal.

PHONES
Headphones can be connected to this instrument.

- When headphones are plugged into this jack, the speakers of this instrument are disabled.

Symptoms which appear to be signs of trouble

The following changes in performance may occur in the Technics Keyboard but do not indicate trouble.

	Phenomenon	Remedy
Sounds and effects	The buttons, keys, etc. malfunction.	▪ Turn off the **POWER** button once, then turn it on again. If this procedure is not successful, turn off the **POWER** button once. Then, while pressing the three lower left buttons in the **RHYTHM GROUP** section (**JAZZ & SWING**, **BALLROOM & SHOW** and **LATIN & WORLD**) at the same time, turn the **POWER** button on again. (Note that, in this case, all programmable settings, functions and memories return to their factory-preset status.)
	No sound is produced when the keys are pressed.	▪ The **MAIN VOLUME** is at the minimum setting. Adjust the volume with the **MAIN VOLUME** control. ▪ The volumes for the selected parts are set to the minimum levels. Use the balance buttons to set the volumes of the relevant parts to appropriate levels. ▪ The part is muted. ▪ The LOCAL CONTROL for a part performed on the keyboard is set to OFF. Set the LOCAL CONTROL to ON.
	Only percussive instrument sounds are produced when the keyboard is played.	▪ In the **SOUND GROUP** section, the **DRUM KITS** button is on.
	The volume is very low when the keyboard is played.	▪ The volume setting in the **SEQUENCER** contents is very low. Follow the INITIAL procedure to reset the settings.
	The sound you hear is different from the sound you selected.	▪ This sometimes occurs when you play back **SEQUENCER** or **COMPOSER** data which was created on a different model, or when MIDI data is received from a connected instrument. Select the desired sounds again.
Rhythm	The rhythm does not start.	▪ The **DRUMS** volume is set to the minimum level. Use the balance buttons to set the **DRUMS** volume to an appropriate level. ▪ A **SEQUENCER PLAY** button is on. When you are not playing back the **SEQUENCER** performance, turn off the **SEQUENCER PLAY** button. ▪ CLOCK is set to MIDI. Set CLOCK to INTERNAL.
AUTO PLAY CHORD	No sound is produced for the automatic accompaniment, or only the sounds of some parts are produced.	▪ An **ACCOMP** part does not sound if its corresponding volume is set to the minimum level. Use the respective balance buttons to set the **ACCOMP 1-5** volumes to appropriate levels.
SEQUENSER	Storage is not possible.	▪ The remaining memory capacity of the **SEQUENCER** is 0. Follow the SONG CLEAR or TRACK CLEAR procedure to erase the memory.
	The playback measure indication is different from when the performance was recorded.	▪ The number of measures corresponds to the time signature of the rhythm selected at the start of recording. To change the rhythm in the middle of the song, record the rhythm change in the RHYTHM part.

	Phenomenon	Remedy
COMPOSER	Storage is not possible.	· The remaining memory capacity of the **COMPOSER** is 0.
	Setting the time signature is not possible.	· The time signature cannot be changed for a pattern which is currently recorded in the **COMPOSER**. If you wish to change the time signature, first follow the procedure to clear the memory.
	The playback timing of the rhythm pattern is different from the timing with which it was recorded.	· The QUANTIZE function was on when the pattern was recorded and the timing was automatically corrected. Set the quantize level to a smaller note unit or to OFF when recording.
Disk/SD card	The Disk Drive produces a noise during recording or playback.	· This occurs when the Disk Drive is reading a disk. It does not indicate a problem.
	When the procedure to load from a disk/SD card is per-formed, the contents of the keyboard memory are erased.	· When performing the load operation from a disk/SD card, the keyboard memory changes to that of the data loaded from the disk. If you wish to preserve a song which is stored in the keyboard memory, save it on a disk/SD card before performing the load procedure.
MIDI	Data cannot be exchanged through MIDI terminals.	· Match the channels on the transmitting side and the receiving side.
	The sound quavers or is distorted.	· When the **USB** terminal or both the **MIDI IN** and **OUT** terminals are connected to a computer, depending on the computer software the received data may be sent back to the instrument just as it is. Because of this the sound generated from the keys and the sound generated from the returned data are both produced, causing undesirable effects, such as the sounds canceling each other out, for example. In this case, either change the software settings to prevent received data from being returned, or set the MIDI LOCAL CONTROL to off.
Other	Noise from a radio or TV can be heard.	· This sometimes occurs when electrical equipment such as a radio or TV is used near the instrument. Try moving such electrical equipment further away from the instrument. The sound may be coming from a nearby broadcast station or amateur radio station. If the sound is bothersome, consult your dealer or service center.
	The cabinet becomes warm during use.	· This instrument has a built-in power source that heats the cabinet to some degree. This is not an indication of trouble.

Error messages

No.	Contents
00	The data on the disk that you are using is for a different product.
01	An error has occurred while the disk was loading. Please try again!
02	There is no disk in the Disk Drive.
03	The file that you tried to load is empty.
05	An error has occurred while the disk was saving. Please try again!
06	The disk that you are using is write protected. Please remove the write protection and try again.
07	The disk that you are using is full. Please use another disk.
08	An error has occurred while the disk was formatting. The disk that you are using may be faulty. Please try formatting another disk.
10	The data is already copy protected.
15	The song you are trying to save is empty.
16	This STANDARD MIDI FILE is incompatible with this instrument and cannot be loaded.
17	This is not a STANDARD MIDI FILE.
18	The timebase (PPQ resolution) that you tried to load is not 24/48/96/192/288/384 PPQ.
20	A problem has occurred with your **SEQUENCER** Data. This might be due to a damaged or faulty disk.
21	Memory full
22	It is necessary to press REC STOP to complete this procedure.
23	It is impossible to change the time signature because it has already been set in the existing tracks.
24	A rhythm track already exists. It is impossible to assign two tracks to rhythm.
25	It is only possible to change the velocity on a melody track.
26	It is only possible to merge melody tracks. Tracks such as rhythm, chord and control cannot be merged.

No.	Contents
27	It is only possible to copy melody tracks. Tracks such as rhythm, chord and control cannot be copied.
28	This song is too long to be saved as a MIDI file.
29	The MIDI file that you have tried to load exceeds the memory capacity of this instrument and cannot be played. The **SEQUENCER** memory has been cleared.
30	It is not possible to change the time signature of a **COMPOSER** pattern after it has been recorded. If you want to proceed, you must first clear the entire **COMPOSER** pattern.
31	The time signature of the pattern from which you are copying is different from the **COMPOSER** memory that you are using. Either: Change the time signature of the **COMPOSER** memory or: Copy from a pattern that has the same time signature
32	Memory full
33	Select a Track before setting parameters for AUTO PUNCH RECORD.
43	The file that you are trying to load was saved on a previous KN keyboard. It is only possible to load using the “PERFORMANCE” option.
44	It is impossible to edit a Drum Kit. Please select a different sound from any group except Keyboard Percussion.
46	It is only possible to insert MELODY Tracks. Tracks such as RHYTHM, CHORD and CONTROL cannot be inserted.
47	This procedure is not possible with a composer pattern or the metronome. Please select a preset rhythm pattern.
54	It is not possible to record using preset banks, compile banks, or control banks. Please select one of the user banks.
55	Special tracks such as CHORD (APC), RHY and CTL exist in the song from which you are copying and are incompatible with the destination song because it is in the GM mode.

No.	Contents
56	AUTO PUNCH recording has been unsuccessful because SEQUENCER operation was interrupted before the PUNCH OUT measure was reached.
58	The song that you have tried to load exceeds this instrument's available memory and cannot be loaded. The selected song memory has been cleared.
62	The computer connection is not active because the computer port switch is set to MIDI. Please turn the power off, set the switch to the desired setting and turn the power back on.
63	This Bitmap is in the wrong format for the KN and cannot be loaded. See the Owners Manual for more details.
64	Please select the Panel Memory that you want to name.
65	It is not possible to use the CHORD FINDER in this mode. Please select CHORD FINDER from HOME page or CHORD STEP RECORD page.
66	SOLO pads are special pads which include Chord information. Pleases use SOLO pads when the rhythm and accompaniment is playing.
67	There are no APC or CHORD tracks. Select and APC track or CHORD track, and try again.
68	It is not possible to record directly into the SOLO pads. Record on the SEQUENCER and Copy the melody and chord information into a SOLO pad.
69	It is not possible to delete all measures.
70	It is not possible to insert over 16 measures in a PATTERN.
71	It is not possible to set the start measure to the measures you set to copy.